

INSIDE DOPE

by GEORGE F. TAUBENECK

Hotel Stories

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High Stakes

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Tast

Spade a Spade

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How To Save Money

It's a Dog's Life

Testiness

The Ultimate Egg Story

One Eye Open

Best Claw Forward

Big Words

Oh, No-o-o!

Ripe History

Sharp as a Tack

We Aim to Please

Hotel Stories

So many of us in this industry spend half our lives in hotels and restaurants that "Dope" thought a few yarns about them might be appreciated.

Approaching a couple which had been there before, the haughty coffee shop hostess nasaed:

"And where would you care to sit?"

"Somewhere," they replied in unison, "near a waiter."

We All Gripe About Service

There are a million stories about the theme of poor service in hotels and restaurants, such as:

"Please be patient, sir. Your fish will be here any moment."

"Oh, yeah? What bait are your fishermen using?"

But the one we like best concerns the hotel coffee shop waitress who, after a long delay, mosied over to the patron's table, threw down a menu, hit him on the right cheek with a napkin, and demanded:

"Wot's yours?"

"Eggs and bacon, please."

"How'll you have your eggs?"

"As hardboiled as you are, toots."

The twist:

He was one of those characters who always tried to magnify his own unimportance by insulting bellboys and waitresses. One night he went too far.

"You couldn't serve a pig right," he snarled.

"Doing the best I can, Porky," she caroled, sweetly.

High Stakes

A portly gentleman of means entered his favorite hotel dining room. A favorite waiter, to whom he gave exceedingly generous tips, always saw to it that he got the best of food and service.

When a new waiter appeared at his table and asked for his order, the gentleman assumed a rather puzzled expression.

"What's the matter with Willie," he asked. "Is he ill today?"

"Oh, no," answered the new waiter. "Me and Willie wuz shootin' craps last night, and Willie lost you to me."

Just Ask for Joe

A college professor, after registering at a somewhat grandiose hotel, found his way to the coffee shop.

When the menu was placed before the learned gentleman by the waiter, the learned "prof" waved it away with an impatient gesture.

"Use your own judgment. Select a tasty dinner for me."

The waiter did, and the "prof" was well pleased. In return, the waiter was awarded a generous tip.

The same procedure was followed during the teacher's entire sojourn at that hostelry. As the conclusion of his visit drew near, the "prof" informed his waiter that he soon would be departing.

"I am sorry to see you leave, Sir," declared the table attendant. "Whenever you, or any of your friends who are unable to read, visit this city,


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The Winners 'News' Announces Results Of Air Conditioning Application Contest

DETROIT—Two gentlemen from Indiana and one from Seattle, Wash. captured \$100 first prizes in the AIR CONDITIONING & REFRIGERATION NEWS contest for the most unusual air conditioning application, the contest judges announced last week.

Victor H. Cox of E. J. Grace Co., Inc. in Lafayette, Ind. was awarded the \$100 first prize in the package unit division for using a package air conditioner to control the humidity around the Purdue university cyclotron. This application permitted the use of the cyclotron during humid weather on a project for the Atomic Energy Commission, Cox said.

Glen Rogers of Rogers Electric Co., Anderson, Ind., won top honors in the central system division for his installation of a central system in a cast iron foundry. The system cut scrap loss to 7% by drying air before entering a cupola.

J. Wilderman of Wilderman Refrigeration Co., Seattle, Wash., won the vote of the judges for first place in the room cooler division for installing a room unit in a truck owned by Industrial X-Ray Engineers. The unit controlled temperature and humidity in a mobile darkroom, testing laboratory, and repair shop used for the inspection of welds in oil and gas pipe lines throughout the southern part of the United States.

The entries of these and other top award winners will be published in later issues of the NEWS.

In addition to these top awards, 36 other money prizes (12 in each division) and 33 honorable mention

Bendix Considers Producing Refrigerator

NEW YORK CITY—Production of a "Bendix" refrigerator is being considered by Bendix Home Appliances, Inc., which Avco Mfg. Co. now controls, it was stated by W. A. Blees, Avco vice president and Crosley general sales manager, in press interviews here last week.

Present distributors of the Bendix home laundry line would be retained to distribute refrigerators, "as long as they do the job," Blees was quoted as saying. He did not say when production of Bendix refrigerators would begin.

Blees spoke before a meeting of the Sales Executive Club of New York, which presented him with an award recognizing his "outstanding accomplishments in the development

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Servel Starts Output of 20-Ton Water Chiller

EVANSVILLE, Ind.—Servel, Inc. announced it has started production of an absorption-type water chiller with a capacity of 20 tons or more, for use with air conditioning units or in manufacturing processes.

John A. Gilbreath, sales manager of Servel's air conditioning division, said that due to the government's need for critical materials, the new unit is available for defense orders only.

It is designed for conditioning multistoried buildings, and may be used in factories, offices, government buildings, and a host of other multiple-room applications connected with the defense effort.

Gilbreath reported the unit's nominal refrigeration capacity rating is 20 tons when it supplies chilled

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NPA May OK Ratings To Obtain Appliances For Military Housing Scrap Metal Plan Outlined by Beer Dispenser Mfrs.

WASHINGTON, D. C.—The National Production Authority may authorize the use of priority ratings so appliances can be obtained for the 60,000 houses to be built near military reservations for families of servicemen under the housing act.

Such action was considered at a recent meeting of NPA officials and a 15-member NPA industry advisory committee on mechanical household refrigerators and farm and home freezers. Committee members represent manufacturers of these products.

Producer representatives were asked if appliance needs for servicemen's dwellings could be met without seriously affecting civilian supply. The committee said this could be done, generally, if purchasers of the appliances were allowed to use a defense order rating.

During the meeting, two five-member task groups were appointed—one for refrigerators and the other for freezers. These groups will study measures for conservation of materials and for possible issuance of an NPA conservation order.

Agency officials and committee members also discussed additional restrictions on critical materials—in

(Concluded on Page 4, Column 4)

See Possibility of Easier Credit Terms

WASHINGTON, D. C.—The Federal Reserve Board has given up any ideas of tightening credit terms for consumer installment buying or extending the existing regulation into new credit fields, qualified observers declare.

In fact, there is thought to be a fair chance that the restrictions might be relaxed somewhat.

Here are some of the reasons for this thinking:

The amount of outstanding installment credit is dropping. Figures show that installment credit outstanding dropped \$212 million in January—an unusually large decline for the month. It is thought that the decline continued in February.

There has been some evidence of a decline in buying in consumer dur-

(Concluded on Page 21, Column 4)

NPA Ignores Dairy Processing Supplies, Association Charges

WASHINGTON D. C.—Dairy and other food processing equipment is being disregarded by the National Production Authority in the allocation of scarce materials.

This was the charge of Howard P. Faust, Buffalo manufacturer who represented members of Dairy Industries Supply Association before the House Committee on Agriculture here recently.

Faust, chairman of the association's committee on the essentiality of dairy processing equipment, during World War II was in charge of War Production Board's allocation program for the industry.

"Production (of processing equipment) cannot be scheduled into—at best, beyond—the next quarter," he asserted, which jeopardizes a "milk life-line" from cow-to-consumer. "This life-line delivers a ten

(Concluded on Back Page, Column 1)

CLEVELAND—A proposal for a "scrap recovery program" in field installations by manufacturers of beer dispensing equipment, who in turn would receive assistance in obtaining materials to build new equipment, has been given the tentative backing of interested officials in the National Production Authority, states W. R. Kromer, Superflow Mfg. Co. here.

Kromer developed the plan "as a self-appointed representative of the beer dispensing equipment manufacturers," he states, and took it to the NPA headquarters in Washington. He states that both the Refrigeration Section and the Conservation Division expressed enthusiasm for the plan, and suggested that a formal presentation of the plan be made by a representative group from the industry.

Kromer has been in contact with other manufacturers in the group and hopes soon to be able to present the plan formally to the NPA. Manufacturers will be required to present a bill of critical materials in each system or piece of equipment they would manufacture, should the plan be approved.

Fundamental principle of the plan is that materials would be controlled

(Concluded on Page 4, Column 1)

Frigidaire Offers Reconditioning Plan To Aid Dealers

DAYTON—An "Appearance Reconditioning Program" for household refrigerators and other major appliances has been developed by Frigidaire Division of General Motors to assist dealers in tackling the replacement market by showing the way to a program that can step up turnover and profits in trade-ins.

Should scarcities of merchandise materialize the "Appearance Reconditioning Program" offers the dealer an additional opportunity to realize a greater dollar volume from his service department by being able to offer a complete reconditioning program.

D. J. Bowell of the sales department and Clarence J. Aspenleiter, special representative on product handling, have been the Frigidaire staff members primarily responsible for establishing the program and promoting it to the dealer organization.

One of the best-received displays

(Concluded on Page 4, Column 3)

Pabst Smith Refrigerator Has 1-Cu. Ft. Capacity

LONG ISLAND CITY, N. Y.—The P.S. Junior, a small-size household electric refrigerator designed to meet the demand of those living in small quarters, or for other special applications, is being marketed by the Pabst Smith Co., Inc.

The refrigerator occupies only 2 sq. ft. of floor space and is a console model, cabinet type requiring no table or stand to elevate the food compartment to a convenient height of 28½ in. The cabinet is 16 in. square and weighs 80 lbs.

It provides one cubic foot of storage space inside of a one-piece, plastic food chamber liner which has all corners rounded. One-half cubic foot

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Frb Asks Banks To Reduce Their Inventory Loans

Possibility of Mandatory Controls Seen In Move To Cut 'Stock-Up' Buying

WASHINGTON, D. C.—Banks have been asked to cut down on their "inventory loans" to wholesalers and retailers, or face the possibility of mandatory controls that would reduce their lending powers.

The Federal Reserve Board's new "Voluntary Credit Restraint Committee" said in its first statement that—"Inventories in the United States, particularly at wholesale and retail establishments, are at peak levels, even after allowance is made for the sharp increases in prices at which inventories are carried. An important part of this abnormal increase in inventories has been financed by borrowed money."

"Excess inventory accumulation has already contributed directly to the rise of wholesale and retail prices beyond any level justified by the supply situation. It obviously has created undue competition in scarce materials."

To cope with this situation, the committee urged banks, insurance companies, and other money lenders to:

Refrain from financing inventory increases "above normal levels relative to sales, or reasonable requirements by other conservative yardsticks."

Encourage borrowers who already have "excess inventories to bring these commitments and inventory positions in line as promptly as is reasonably practical, thereby reducing the amount of credit being used in this manner."

If the voluntary controls fail to work, it is predicted, the Federal Reserve Board might "freeze" bank loans. Such a freeze would in effect tell bankers that as of a specified date they would be forbidden to increase their loans outstanding.

The administration believes that it could impose such a freeze without Congressional approval, taking such action under "emergency" powers already contained in the Bank Act of 1933 and the Trading with The Enemy Act.

Bank loans to business have climbed steeply. While they dropped slightly in the week ending March 7 it was the first such decline since May of last year.

The Federal Reserve Board reported industrial, commercial, and agricultural loans outstanding at member banks in 94 cities on March 7 at \$18,680 million. A year ago this figure was \$13,799 million.

Inventory Question Brings Variety of Answers

DETROIT—Just how big are inventories of refrigerators, home freezers, and other major appliances?

One simple answer can't be given. The industry realizes, however, that retail sales have fallen off from the December peak of the "war scare" buying, although they are said to be at higher levels than the first three months of 1950. Production has continued at a high rate.

The Mechanical Refrigerator and Home Freezer Industry Advisory Group which met with National Production Authorities on March 20 were said to have stated that inventories of household refrigerators were "adequate" at this time, but that production of freezers "hasn't kept up with demand."

A prediction that electric appliances and other durable goods will be plentiful enough this spring to maintain "competitive selling conditions" but there won't be a big enough supply to produce a serious inventory condition, was made by Fowler B. McConnell, president, and Theodore V. Houser, vice president in charge of merchandising, of Sears, Roebuck & Co.

Houser said that Sears has "tens of thousands of customers on the waiting list for automatic washing ma-

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Admiral Price Reductions Put 16-In. Table Model Television Under \$200

CHICAGO—In a move designed to "put table model TV sets back in the low-priced field," Admiral Corp., major television and appliance manufacturer, on March 19 announced new low prices on three of its most popular receivers.

In the new scale, a 17-in. tube mahogany cabinet model (17 K 12) which formerly sold at \$279.95 is re-priced at \$249.95. A 16-in. model in mahogany (16 R 12) which sold at \$249.95 is now 209.95, while a similar model in an ebony cabinet (16 R 11), formerly \$239.95, is now \$199.95. The latter price marks the first time a 16-in. Admiral model has sold under \$200 retail since pre-Korea.

In announcing the new prices, Admiral's president Ross D. Siragusa said that "in these days of high down payments, excise taxes, and inflation in general, there is a pressing public need for low-priced merchandise. This rescaling of prices on the new low cost end of our line is designed to fill that need."

"In addition," the executive continued, "we anticipate that it will greatly stimulate traffic in the stores of small TV dealers who are presently suffering from an inability to supply inexpensive merchandise. With the advent of the Korean war, low-cost TV practically disappeared. Admiral's move should put table model TV sets back in the low-price field where they belong."

Cooling Would Make Jail Too Attractive

MIAMI, Fla.—"There will be no air conditioned comfort for prisoners in Miami's proposed police building on the riverfront at NW 11th Ave.," said Police Chief Walter E. Headley. "Plenty of light and air, sure," Headley declared. "But we don't want to make the jail too attractive. After all, those folks are not supposed to be there if they behave themselves."

Chief Headley made his observations at a conference of city officials with Robert Law Weed, architect selected to design the new building.

Servel Will Manufacture Cartridge Cases for Army

EVANSVILLE, Ind.—Servel, Inc. announced it has received a contract from the Cincinnati Ordnance District to make steel cartridge cases for the Army's new recoilless rifle.

Production on the order, which is Servel's second current defense contract, will begin in October. The company previously received an order for airplane wings for F-84 Thunderjet fighter planes. The size and amount of the new contract were not revealed.

No new buildings are contemplated, but the contract will require installation of some heavy presses and other equipment. Ground was broken recently for a new building, designed to provide 121,000 sq. ft. of plant area, to house the company's wing production.

Ice Cream, Milk Groups Meet In Detroit In Oct.

DETROIT—The annual conventions of the International Association of Ice Cream Manufacturers and the Milk Industry Foundation will be held here the week of Oct. 22-26, it has been announced.

The former group will hold its sessions Monday and Tuesday, Oct. 22 and 23. A joint general session of both groups is set for Wednesday. This session will also serve as the opening program of the Milk Industry Foundation, which will hold meetings on Thursday and Friday.

This being stand-by year for the Dairy Industries Supply Association, there will be no Dairy Exposition. However, supply firms are expected to have representatives in good number attending the conventions.

DISA will announce later a limited program of activities to provide traditional dovetailing with the conventions. No exhibits of supplies will be set up in Detroit.

\$568,930 Defense Contract Received by Hussmann

ST. LOUIS—The Department of Defense has awarded the Hussmann Refrigerator Co., here, two contracts calling for a total of 130 pre-fabricated refrigerated warehouses at a cost of \$568,930, it was reported.

As the equipment is of the same general type that the company turns out for civilian customers, no change-over was required. Production on the units has already started.

Steel, Aluminum, and Copper

Manufacturers Told That Defense Needs May Be Much Less Than Previously Predicted

CHICAGO—While the U. S. will have to learn how to live in an "arsenal" economy for many years ahead, the drain on strategic materials imposed by military needs should be nowhere as great as that in World War II, and probably not as great as some authorities have supposed, members of the National Electrical Manufacturers Association were told by Col. Willard Chevalier, executive vice president of the McGraw-Hill Co., during their winter meeting here.

"During the next two years our defense planners expect to use about 20% of the gross national product for military and directly related purposes, and another 10% for 'defense-essential' purposes, such as an expansion program for our basic industries," the speaker said. "After that time, they expect to reduce defense 'take' from the normal economy to about 10%. In other words, the defense-essential will fade out, and the 20% will be halved."

"Defense Mobilizer Wilson hopes if we should not have a full-scale war, this expansion will be sufficient to maintain at least our present level of living standards, plus the 10% defense load that we must expect to carry after 1952, until such time as war actually strikes or the Communist threat to the world has abated."

'We Must Get Used To Living In Arsenal Economy'

"Until the occurrence of either one of these, we Americans must forget our traditional policy of living up to our total productive capacity until a war is upon us, and then improvising an armament industry to save our hides. From now on, we must get used to living in an arsenal economy," he said.

Col. Chevalier said, "Our military requirements are heavily concentrated in electronic control equipment, vehicles, and airplanes—the sort of equipment calculated to multiply our limited manpower by giving it the best of modern equipment."

"I am reliably informed that the electronic equipment on a medium bomber now costs as much as the entire plane cost in World War II. And, believe it or not, the same thing seems to be true of a tank."

"In terms of materials," he explained, "this means that the really tough supply problems won't be in steel, or even aluminum and copper, as such. It was to this trio of metals that the Controlled Materials Plan was applied in World War II."

"The really tough supply problems will be in special shapes and alloys of steel to meet the new military production problem. And it will be in cobalt and columbium, and a lot of exotic new materials and chemicals that never even made a headline in World War II."

Concerning copper, he said, "We have been told that by early 1952 no

copper at all will be available for ordinary consumer goods. I will venture to predict that this class of production, excepting only the 'frivolous' area within which the use of copper will be forbidden altogether, will be cut back not more than 60%, and possibly as little as one half. The total supply available to domestic fabricators will be about 110,000 tons per month."

"I understand that recently there have been some drastic revisions in copper and zinc stockpile objectives, so that purchases will be much reduced, if not eliminated."

Defense Needs Will Not Be More Than 1/3 of Steel

"According to official estimates, peak military needs and defense-essential industry will not take more than a third of the steel output. Conservation and end-use limitations will extend the remainder of the supply for the less frivolous non-defense uses, so that probably more than two thirds of the normal supply will be available for electrical non-defense products. But, as always in the case of steel, we must allow a considerable variation among the different types of steel items."

"Stainless steel, for example, may be as much as 70% short for permissible non-defense uses. The steel supply will expand fairly rapidly from the present output rate of 105 million tons per year to 120 million tons or more by 1953. Therefore, the worst hardship in steel apparently will be felt in early 1952."

"I am not implying that steel, copper, and aluminum are not going to give us some supply problems. But they promise to be relatively simple problems, compared to the new crop of supply problems spawned by the wide extension of the electronic age to the art of warfare."

"The electrical manufacturing industry," Col. Chevalier said, "uses steel, copper, aluminum, zinc, lead, tin, rubber, plastics, textiles, wood, mica, tungsten, asbestos, chromium, cobalt, nickel, and silver. The bellwethers on this list are copper and steel. Because of its importance as a conductor, copper supply will most seriously limit output and in most cases where this does not prove to be the case, the steel supply will be the next serious obstacle. Within the limits imposed by these two metals, the others will either be adequate in supply or susceptible to substitution."

"The opinion of seasoned observers is that the requirement figures, as during World War II are full of unrealistic concepts, and that the cutbacks in civilian goods for public consumption will not prove to be as severe as Washington information seems to indicate. Then, too, orders forbidding uses considered to be frivolous or unnecessary will make more materials available for the more useful consumer goods."

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conventional condensing units 1/6 to 7 1/2 h.p.
air cooled, water cooled and combination!

PARMETIC...

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Model HWC-50
5 H.P.



Model PM-0 1/8 H.P.

BY COMPARISON—YOU'LL BUY PAR and PARMETIC



PAR AIR COMPRESSORS



PAR REFRIGERATION COMPRESSORS



WRAP-O-MATIC CANDY & COOKIE WRAPPING MACHINES

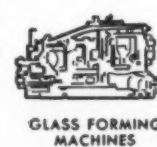
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HEALTHFUL LIVING THROUGH FROZEN FOOD

Locker Plants, Public Restaurants Require Authorization To Build

WASHINGTON, D. C.—In an explanation of its basic construction order M-4, the National Production Authority recently pointed out that specific authorization is required before construction can start on cold storage food lockers or restaurants catering to the general public.

At the same time, the agency said that construction of food processing plants and factory restaurants for the exclusive use of factory personnel do not require specific authorization.

Order M-4, designed to conserve strategic materials and manpower for the mobilization, prohibits new construction costing more than \$5,000 for recreation or amusement purposes and requires specific author-

ization for construction of nearly all commercial structures costing more than \$5,000.

The NPA also pointed out that the installation of acoustical tile in a building is considered alteration work and not maintenance and repair. If its cost, added to the cost of other construction work on a building during a consecutive 12-month period, exceeds the small job exemption of \$5,000, the installation cannot be made without an NPA authorization.

In computing costs under this small job exemption it is not necessary to include the cost of items which are to be reused rather than newly acquired, such as prefabricated partitions.

New Field Offices Set Up To Pass On Commercial Building 'Starts'

WASHINGTON, D. C.—The National Production Authority has moved to expedite the administration of its construction controls by empowering 11 additional field offices to act on applications for authorization to commence commercial construction.

Since Feb. 15, when the authorization system went into effect to conserve materials and manpower for the mobilization program, 18 field offices have been acting on the applications. The 11 new offices designated to pass on applications are in El Paso, Hartford, Houston, Jacksonville, Fla., Memphis, Miami, New Orleans, Pittsburgh, Providence, Salt Lake City, and San Antonio.

NPA said that any person desiring to commence construction on an office building, store, or other type of commercial building which requires authorization may obtain an application form and information from Department of Commerce field offices, which serve NPA in more than 80 principal cities, and that the completed application should be submitted to the nearest office empowered to act on it.

The Construction Controls Division in Washington passes on applications from Metropolitan Washington and all others which involve more than \$1,000,000 in cost or 50 tons of steel.

Regional offices and their addresses are:

Region I—1800 Customhouse, Boston 9.
Region II—42 Broadway, New York 4.
Region III—Jefferson Bldg., 1015 Chestnut St., Philadelphia 9.
Region IV—Room 2, Mezzanine, 801 E. Broad St., Richmond 19, Va.

Region V—418 Atlanta National Bldg., 50 Whitehall St. S.W., Atlanta 3.

Region VI—410 Union Commerce Bldg., 925 Euclid Ave., Cleveland 14.

Region VII—1150 McCormick Bldg., 332 S. Michigan Ave., Chicago 4.

Region VIII—338 Midland Bank Bldg., 401 Second Ave. S., Minneapolis 1.

Region IX—2400 Fidelity Bldg., 911 Walnut St., Kansas City 6, Mo.

Region X—Room 1114, 1114 Commerce St., Dallas 2.

Region XI—142 New Customhouse, Nineteenth and Stout Sts., Denver 2.

Region XII—306 Customhouse, 555 Battery St., San Francisco 11.

Region XIII—809 Federal Office Bldg., 909 First Ave., Seattle 4.

District offices to whose managers this delegation extends:

314 United States Appraisers' Stores Bldg., 103 S. Gay St., Baltimore 2.

1038 Federal Bldg., 230 W. Fort St., Detroit 26.

Chamber of Commerce Bldg., 310 San Francisco St., El Paso, Tex.

224 Post Office Bldg., 135 High St., Hartford 1, Conn.

602 Federal Office Bldg., Houston 14, Tex.

425 Federal Bldg., 311 W. Monroe St., Jacksonville 1, Fla.

1546 United States Post Office and Court House, 312 N. Spring St., Los Angeles 12.

229 Federal Bldg., Memphis 3, Tenn.

947 Seybold Bldg., 36 N.E. First St., Miami 32, Fla.

1508 Masonic Temple Bldg., 333 St. Charles Ave., New Orleans.

1013 New Federal Bldg., 700 Grant St., Pittsburgh 19.

217 Old United States Court House, 520 S. W. Morrison St., Portland 4, Ore.

327 Post Office Annex, Providence 3, R. I.

910 New Federal Bldg., 1114 Market St., St. Louis 1.

508 Post Office Bldg., 350 S. Main St., Salt Lake City 1.

518 Bedell Bldg., 118 Broadway, San Antonio, Tex.

Nema Will Continue Promotion Program, Offers Freezer Manual

CHICAGO—The major appliance division of the National Electrical Manufacturers Association voted to continue the educational and promotional programs approved at the annual Nema meeting held last November at Atlantic City, according to B. C. Neece, division chairman.

Need for education of consumers on the most effective use of appliances is more important than ever in view of the mobilization program, Neece pointed out.

The farm and home freezer section of Nema is directing its educational campaigns at home economists, home economics teachers, and school management officials. Being used in this campaign is a new home freezer manual written by a noted home economist.

The program of the electric water heater section is aimed at architects and builders, appliance dealers, and plumbing and heating contractors. That of the electric range section is directed at home economists, architects and builders, and dealers.

Murray Smith Gets OPS Post

WASHINGTON, D. C.—Michael V. DiSalle, director of price stabilization, has appointed Murray Dabney Smith of Aurora, Ill., to be Director of OPS' Industrial Materials and Manufactured Goods Division.

Smith formerly was with the Public Service Co. of Northern Illinois.

'A Little Child Shall Lead Them' Promotions Use Appeals To Children To Get Prospects to a Demonstration

Norge Comic Masks

CHICAGO—A large-scale "comic mask" promotion designed to get parents into dealer stores for demonstrations has been launched by Norge.

Under the promotion, more than 1,000,000 cut-out paper masks for children are available to Norge dealers. The three-dimensional, four-color masks are of Ed Wynn, Jack Carson, Jimmy Durante, and Danny Thomas. A "script" is provided on

the inside of each mask so children can stage their own "TV show."

Children can obtain the masks by having their parents go to the local Norge dealer's store and watch a demonstration of a Norge product.

Along with the masks, participating dealers receive window streamers and display cards. These aids call attention to the product demonstrations and to the NBC "Four Star Review" television program which is being used to publicize the give-away offer.

'Popsicles' In a Freezer

WINCHESTER, Tenn.—Keeping a section of a display home freezer full of "home-made popsicles" for distribution to children visiting the store, has helped to sell several additional units per year for James Miller, head of Vaughan Hardware Co. here.

Miller believes that home freezers are primarily a "family market item" and, therefore, one box is always kept on "actual demonstration" to appeal to all members of the family.

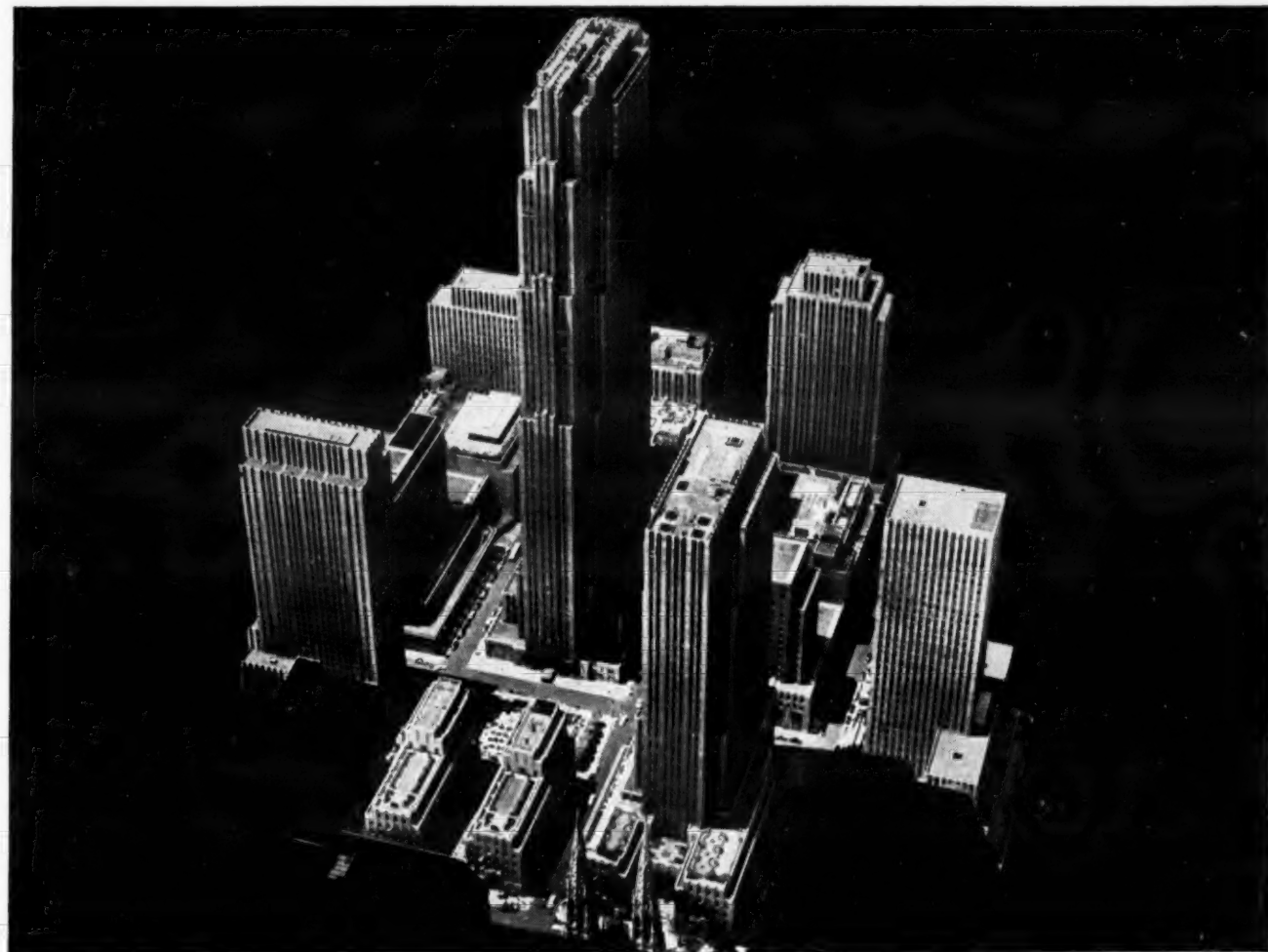
The demonstration model at the head of the appliance department, contains many varieties of country meats, properly packaged for home freezer storage, to appeal to the farmer and farm wife: silver-foil-wrapped corn-on-the-cob, strawberries, blueberries, and other produce items, plus a variety of fruit-

flavored popsicles, which have been made up with natural fruit juices, and frozen in the freezer.

Now whenever a mother is shopping in the store, accompanied by her children, Miller or two salesmen on duty reach into the freezer, pick out a popsicle for each, and extend it to the children with the store's compliments. This naturally leads to conversation on the ease with which such frozen delicacies are prepared, and into a discussion of ice cream, and other dessert items.

Many women who normally pay little attention to home freezers on display, develop high interest after the popsicle presentation, and in this way, as many as six to 10 additional boxes per year have been sold through building goodwill.

A new "batch" of popsicles is made up each week to insure that there is always a plentiful supply.



World-Famed "City Within a City"

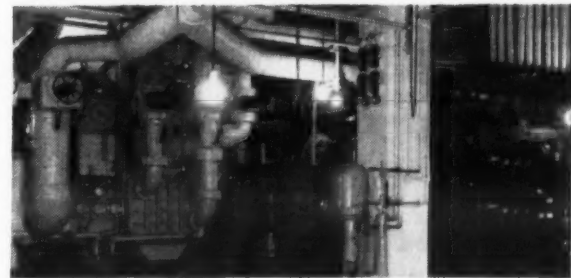
...Air conditioned with "Freon"-operated equipment

Rockefeller Center in the heart of New York's Manhattan is the largest privately owned business and entertainment center in the world. Begun in 1931, it now consists of 15 huge buildings, occupying more than 12½ acres. The RCA building, dominating structure in "Radio City," towers 70 floors . . . 850 feet above street level.

Throughout this fabulous Center more than 2,000,000 sq. ft. of floor area is completely air conditioned with equipment using "Freon" safe refrigerants—and these machines dependably produce over 8,000 tons of refrigeration!

Because "Freon" refrigerants are recognized by architects and engineers everywhere as the most suitable for serving the public, it was a logical decision to install air conditioning equipment that is "Freon"-operated. These refrigerants are nonflammable, nonexplosive, practically nontoxic . . . harmless to foods, furs, fabrics or finishes.

"Freon" refrigerants meet all safety requirements of city codes everywhere. In addition, the uniformity of these refrigerants insures the efficient and economical performance of air conditioning systems over long periods of time . . . good reason why most equipment selected for today's modern structures is designed to use these superior refrigerants. E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division, Wilmington 98, Delaware.



A small part of the equipment installations necessary to air condition buildings in Rockefeller Center.



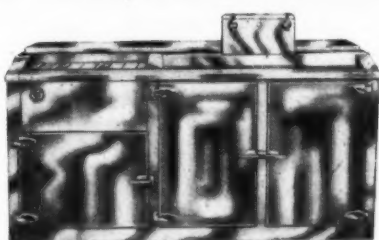
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

FREON
SAFE REFRIGERANTS

"Freon" is Du Pont's registered trade-mark for its fluorinated hydrocarbon refrigerants.

America's best dressed bars are wearing THE CLUBSTER

Compact, all-in-one unit holds 2 half barrels on top while one pre-cools under the spacious 5 case bottle compartment.



MODEL NO. 833 SS, Patents Pending.

Yes, the nation's top bars and clubs enjoy the beauty and convenience of the CLUBSTER. Complete with refrigerated faucets which keep beer at ideal temperature from keg to glass—this beautiful model comes in stainless steel (illustrated) or black baked enamel. Available either for remote compressor installation or as a complete electric model. . . .

WRITE TODAY!

LA CROSSE COOLER CO.

2801 LOSEY BLVD., SO.

LA CROSSE, WIS.

Export Representatives: Melvin Pine & Co.,

80 Broad St., New York, N. Y.

Cable Address: Eximpor

Beer Dispenser Mfrs.' Scrap Plan--

(Concluded from Page 1, Column 4)
at the manufacturing level on a point or credit system. For example, each manufacturer might be given a priority rating for materials in a direct relation to credits accumulated through sale of scrap to a recognized dealer. The manufacturer would accumulate such credits through an arrangement with his distributors and dealers.

The plan aims at procuring hundreds of tons of critical scrap materials that are today lying idle in basements and storerooms of restaurants, cafes, and taverns, or in use in obsolete dispensing equipment in such establishments. These materials could be made available and returned for better use through replacement by new and up-to-date beer dispensing equipment that employs a smaller percentage of the critical materials replaced.

In return the manufacturers of beer dispensing equipment ask for materials that will permit them to continue to build, distribute, and sell the beer dispensing equipment which will be needed to replace defective and inefficient equipment in taverns, cafes, and restaurants.

Such a request would be made on the premise that through the scrap recovery program the manufacturers would return to use several times the amount of critical materials used in the manufacture of new systems.

Ten years is the average lifetime of a beer dispensing unit, Kromer said. Most of these systems are obsolete and need replacement now, he declared, especially so since restrictions have been placed on cans and bottle caps. In normal times the industry would replace 10% of existing systems each year, but a new greater market has developed since brewers will be kegging a greater percentage of their product, Kromer declared.

Kromer estimated that the average

ice or sweet water bath beer cooling system when replaced will return to active use an average of the following critical materials:

- 50 Lbs. Pure Tin
(From Coils and Leads)
- 20 Lbs. Copper
(From Dispenser Lines and Copper Tubing)
- 22 Lbs. Brass
(From old faucets, taps, and tap rods)
- 10 Lbs. Stainless Steel
(From old dispensers).

(Plus an undetermined amount of copper wire, copper, brass, and iron from old condensing units, valves, and fittings, as well as motors and some condensing units that can be rebuilt.)

The sales plans of the companies manufacturing and distributing these systems find a ready market for replacement, Kromer declares. The savings, and increased profits effected by this modern equipment in most cases will exceed the monthly payments required to pay the difference. All obsolete equipment in use, or out of use, will readily be given trade towards or as a down payment, he declared.

"Based conservatively on replacing 12% of only 300,000 obsolete systems in or out of use each year," Kromer related, "would mean 36,000 beer systems replaced with a conservative return of the following amounts of critical materials:

- "1,080,000 lbs. pure tin
- 432,000 lbs. copper
- 720,000 lbs. brass
- 360,000 lbs. stainless steel."

R. H. Macy Becomes I-H Dealer

NEW YORK CITY—Bruno-New York, Inc., local distributor of International Harvester refrigerators and freezers, has announced the appointment of R. H. Macy's, New York, as an I-H refrigeration dealer.



Pabst Smith, Jr.--

(Concluded from Page 1, Column 4)
of dry storage space is also provided for fruits and vegetables, bottles, and canned goods.

Refrigeration is furnished by a hermetic compressor. A total of 21 ice cubes totaling 2 lbs. in weight is frozen at one freezing. Temperatures are thermostatically controlled and operation is automatic in line with the control setting.

The regular outside finishes are a white baked on enamel or a solid ivory. Special finishes may be obtained as well as grained wood finishes, such as mahogany or walnut.

The fair traded price, Pabst Smith Co. announces is \$129.75 including excise tax.

General Chef Names Eastern Outlet for Refrigerator-Range

BOSTON—Northeastern Distributors, Inc. here has announced its appointment as distributor for General Chef range-refrigerator combinations. The company will distribute the line in Maine, New Hampshire, and Massachusetts, with the exception of Hampshire, Hampden, and Berkshire counties.

Frigidaire Reconditioning Program--

(Concluded from Page 1, Column 4)
during the recent Mid-Winter Home Furnishings Markets in Chicago was the display of the essentials of the program which was set up in Frigidaire's space in the American Furniture Mart.

Physical essentials of the "Appearance Reconditioning Program" consist of a complete paint spray outfit and other cabinet refinishing materials, and Frigidaire's "Practical Appliance Reconditioning Manual."

The "Appearance" program ties in with Frigidaire's "TAG" (tested, approved, guaranteed) program on used appliances, and is something in a nature of an extension of the program to develop more dealer interest in it, and to assure the dealer that he can develop appearing merchandise from trade-ins that he can sell at a profit.

"Replacement sales represent the biggest market opportunity on refrigerators today; all the figures show that," Bowell says. "The dealer has to go out after this market aggressively, because unless there is an actual breakdown on the refrigerator in use, people aren't inclined to give much thought to buying a new model."

"So it's up to the dealer, through direct sales canvassing or by proper use of selling through service calls, to open the door to replacement sales."

"Do you know what your operating cost is?" can be one approach, and the use of a watt meter can demonstrate this point. "Is it producing satisfactory refrigeration?" is

another approach. Leaving a thermometer in the refrigerator often provides a simple but graphic demonstration of an old refrigerator's ineffectiveness."

A well-considered program on used appliances breaks down into three main parts, Bowell points out:

1. The "buying" appraisal.
2. The reconditioning of the used appliances.
3. Sale of the reconditioned product.

The appraisal and allowance for the trade-in are important, of course, in any program that is designed to make a profit on handling trade-ins. Use of books giving trade-in values are helpful, of course, but Bowell suggests the following general procedure as one designed to assure, as far as possible, a profit:

"The appraiser should see the refrigerator in the kitchen, then picture it in his mind in completely reconditioned form, and then ask himself 'what would it bring in my market today?' From the estimated price at which he can sell it he should deduct the cost of reconditioning—both unit and cabinet—the cartage, costs, and whatever profit he thinks he should have. This should leave the amount that should be allowed as the trade-in value."

What does a complete "Appearance Reconditioning" job cost? Frigidaire has compiled some figures from a continuing dealer survey which indicates the labor cost will average \$12 per job (higher in some labor markets, lower in others). Materials for a complete job should run \$6.50 at the top.

Military Housing--

(Concluded from Page 1, Column 3)
cluding steel, copper, and possibly aluminum—a repair parts program for the industry, and NPA Order M-47 on use of steel.

In the discussion on conservation of materials, NPA officials stressed simplification of products to eliminate non-essential items, standardization (permissible under government sponsorship), and use of alternate materials.

The officials also asked for suggestions for modification of government specifications to conserve critical materials and recommended appointment of salvage committees in all plants to save as much scrap as possible.

Hope that a repair parts program for the industry would soon be worked out by the NPA was expressed by officials. Advisability of a program for all household appliances, instead of for individual products, was considered.

Regarding NPA Order M-47, members of the committee complained about the provision limiting the use of steel in the production of individual items. They said they favored restrictions simply on total usage of steel and other materials to permit greater flexibility.

Also discussed was whether or not to divide the committee into separate advisory groups, one for refrigerator manufacturers and one for freezer producers. Consensus was that the single committee should be continued. However, members said they preferred separate task groups.

Another topic taken up was the ratio of standard and deluxe models. Committee members said any increase in deluxe models was unlikely because of the NPA copper and aluminum orders.

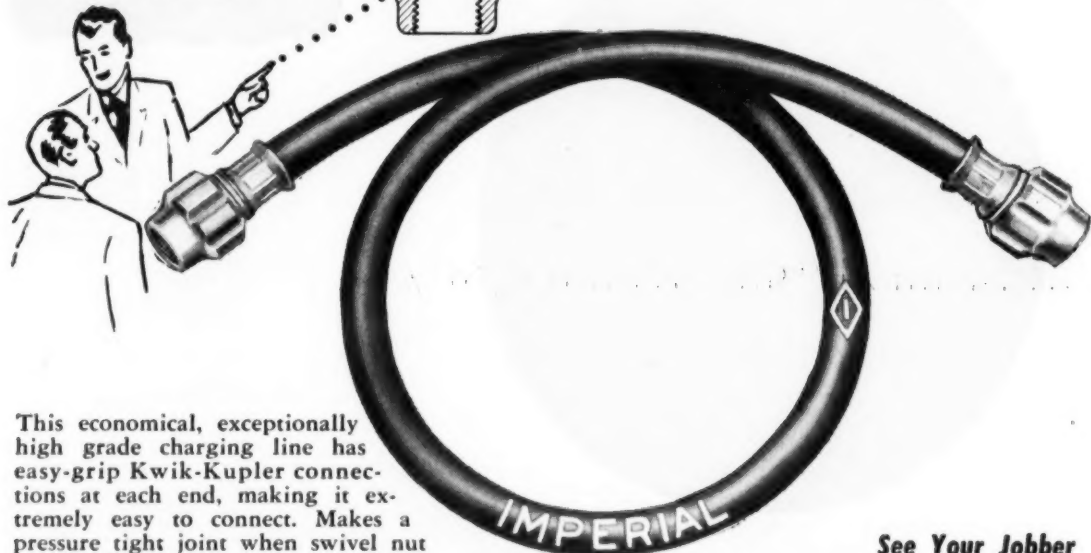
The next meeting of the committee was tentatively scheduled for May 1. Thornton B. Moore and Robert E. Ditsler, both of the NPA's Consumer Goods Division, presided at the meeting for the government. The following industry representatives were present:

L. H. D. Baker, Admiral Corp.; Inwood Smith, Avco Mfg. Corp.-Crosley Div.; H. L. Clary, Borg-Warner Corp., Norge Div.; C. K. Rieger, General Electric Co.; H. M. Kelley, General Motors Corp., Frigidaire Div.; J. L. Johnson, Gibson Refrigerator Co.; L. J. Sorensen, Motor Products Corp., Deepfreeze Appliance Div.; R. A. Rich, Philco Corp.; J. H. Overmyer, Revco, Inc.; F. J. Bommer, Sanitary Refrigerator Co.; John W. Krueger, Seeger Refrigerator Co.; George S. Jones, Jr., Servel, Inc.; J. K. Noel, Jr., Victor Products Corp.; D. A. Packard, Nash-Kelvinator Corp., Kelvinator Div.; and G. H. Mellinger, Westinghouse Electric Corp.

Kwik-Kuplers on IMPERIAL CHARGING LINES

... means jobs get done faster

"The gasket cannot be blown or dropped out, yet you can readily replace it."



This economical, exceptionally high grade charging line has easy-grip Kwik-Kupler connections at each end, making it extremely easy to connect. Makes a pressure tight joint when swivel nut is made finger tight.

Built for long reliable service. Hose has special composition core impervious to common refrigerants, covered with 4-ply woven fabric with neoprene outer covering. Has far greater tensile strength than ordinary hose. Seal gaskets cannot be blown or dropped out, but are readily replaceable.

1/4" Flare Kwik-Kupler at each end.	Net Each
No. 197-FT—24" overall length.....	\$2.65
No. 198-FT—30" overall length.....	2.85
No. 199-FT—36" overall length.....	3.25

THE IMPERIAL BRASS MFG. CO.
534 S. Racine Avenue, Chicago 7, Illinois
Canada: The Imperial Brass Mfg. Co., 33 Church St., Toronto, Ontario

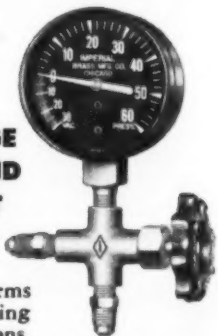
IMPERIAL

FITTINGS • VALVES • DRIERS • FILTERS
FLOATS • CHARGING LINES • TOOLS for
Cutting, Flaring, Bending, Pinch-Off, Swedging

See Your Jobber
Ask for Catalog 80-A

NEW IMPERIAL SINGLE-GAUGE CHARGING AND TESTING UNIT

Exceptionally compact and easy to carry. Performs a variety of charging and testing operations. 2 1/2" compound gauge reads 30" to 60 lbs., vacuum in 1" calibrations.
No. 401-C Unit without gauge. Net each..... \$2.85
No. 402-C Unit with 2 1/2" gauge. Net each..... 5.20



United

FOR Quality AND Economy

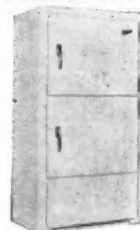
DRY KOOL BOTTLE COOLER

World famous for performance and design. 14 models to meet all requirements in stainless steel or brown Dulux finish.



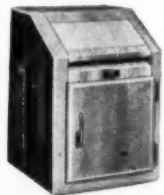
UPRIGHT FREEZER 15 Cubic Feet

Scientific placement of cooling coils, two separate food compartments, dual doors to minimize cold loss, insure balanced freezing at minimum cost.



KUBEMASTER ICE CUBE MAKER

Whenever food or refreshment is served, ice cubes as you need them. Choice of 3 beautiful models.



KOOLMASTER DIRECT DRAW

Engineered to serve beer to the "Brewmaster's" taste. Its smart appearance enhances any establishment. Choice of 8 models in stainless steel or brown Dulux finish.



REACH-INS

Modern flush fronts with recessed handles in popular sizes. Ten models to choose from. Available in white Dulux, stainless steel fronts and glass doors.



DESIGNED—ENGINEERED—MANUFACTURED By
UNITED REFRIGERATOR COMPANY
Locust and Walnut Sts.
HUDSON, WISCONSIN

DOUBLE Regular**TRADE-IN ALLOWANCE**

On Your Old

Range or Refrigerator

\$

WE NEED USED KITCHEN RANGES AND REFRIGERATORS for our Used-Appliance Department.

So... for the Month of March... E. J. Hunter will pay DOUBLE TRADE-IN ALLOWANCE on every range or refrigerator traded in on a new one.

PHONE EM. 5-1306 or MA. 0719 for free appraisal.

We handle a complete line of well-known appliances.

2785 Yonge open TUESDAY and Friday till 9 p.m.

144 Bay open FRIDAY till 9 p.m.

E. J. HUNTER Co.

744 BAY Ave. 3-1306 Everything from TIRES to TELEVISION

Hunter's newspaper advertisement.

Dealer Advertises Double Trade-In Allowance

TORONTO, Ont., Can. — E. J. Hunter Co. here stimulated appliance business during March by offering a double trade-in allowance on old ranges or refrigerators.

The firm promoted the event with an eye-catching newspaper advertisement which stated: "We need used kitchen ranges and refrigerators for our used appliance department. So, for the month of March, E. J. Hunter will pay double trade-in allowance on every range or refrigerator traded in on a new one."

The firm invited prospects to call either of two phone numbers for a free appraisal, and pointed out that it handles a complete line of well-known appliances.

'Economy Asset'**Lift-Gate Saves Time, Money, and Impresses Customers, Dealer Says**

CHICAGO — With the need for economy in every aspect of appliance retailing, service, and delivery paramount in these days of allocation, the "lift-gate" installed on the firm's delivery truck is well worth consideration, according to Paul Muscato, head of Garfield's, appliance dealer here.

Setting up a general economy program, Muscato made a thorough study of every operation in the company's sales, service, and delivery systems. From these, it was determined by a "cost survey" that the lift-gate was one of the firm's most important economy assets.

Muscato's figures show that the lift-gate returns approximately \$15 per day by eliminating the salary of a full-time helper, and by doubling the number of deliveries which one driver can make per day. Second, equally substantial savings are made possible through the fact that it is no longer necessary for servicemen, salesmen, and "the boss himself" to drop other activities, in order to help out with loading a heavy home freezer, refrigerator, etc., on the company truck.

Along with the \$15 per day return, the lift-gate makes an excellent impression on customers, inasmuch as its modern time-saving efficiency requires less time at the customer's home, less blocking of driveways, etc.

"We paid \$690 for the installation," Muscato said, "and believe that the gate actually paid for itself within a few months' time."

Grant's Gets NPA Approval for Air Conditioned Store in Fla.

JACKSONVILLE, Fla.—Construction of the three-story W. T. Grant Co. department store at Main and Adams, to cost well in excess of \$500,000, was approved Feb. 23 by the construction controls division of the National Production Authority. The new structure will be air conditioned throughout.

Officials said the approval cleared the way for Grant's to proceed with construction plans which were halted when the NPA commercial construction freeze went into effect in January.

JUST ASK US!

Turn to "What's New" Page for useful information on new products.

Reinforced Plastics Found Better for Some Applications by Apex

CHICAGO—Reinforced plastics are now being used by Apex Electrical Mfg. Co., C. G. Frantz, president, told the reinforced plastics division of the Society of the Plastic Industry.

Frantz said products made with the plastics following experiments are apparently better than those for which other materials are used.

A recent application was in the replacing with Fiberglass of hard to obtain Monel metal for a 2½-gal., high-temperature water tank used in connection with the company's automatic dishwashers, he reported.

Limited use of plastics of the non-reinforced variety in products such as those of Apex "has long been the practice and with complete success when discretion was observed," Frantz remarked.

"It was apparent that non-metallic materials offered advantages particu-

larly in connection with the use of the recent high-powered cleansing solutions in respect to freedom from deterioration."

In addition, he said, these materials are non-magnetic, heat retentive, light in weight.

'Not Air Conditioners' Says Reg. W on Evaps

WASHINGTON, D. C.—Evaporative air coolers which do not incorporate a refrigerating unit are not "air conditioners, room unit," within the meaning of Group B, Item 7 of section 9 of Regulation W, it has been ruled by the Federal Reserve Board.

Thus evaporative air coolers are not subject to the restrictions on time sales terms established in Regulation W.

Supermarket Air Conditioned

NEW ORLEANS—Completely air conditioned, the new Williams Super Market, 2139 St. Charles, here, held its formal opening March 1.

TV, Air Conditioning Depts. Joined by Dealer Who Finds They Help Each Other

HOUSTON, Tex.—Do air conditioning units and television sets complement one another from a sales standpoint?

Joske's department store here decided they do. So the air conditioning department was moved from the basement appliance section to a second floor area adjoining the television and radio department.

James H. Keenan, general manager of Joske's, explained why:

"We believe that the air conditioning department is a natural complement for television because of the pick-up in air conditioning sales at a time when television business is at its lowest, which provides an opportunity to keep the television staff intact during poorer volume months."

(Although now supervised by David M. Daum, manager of television and radio, the air conditioning department has its own sales staff at present. However, it is planned to have television salesmen sell air conditioning units also dur-

ing the peak season for this equipment.)

"We also believe that a lot of people who have bought television are natural prospects for air conditioning, because having air conditioning is the best way to enjoy television during the summer months in this hot climate."

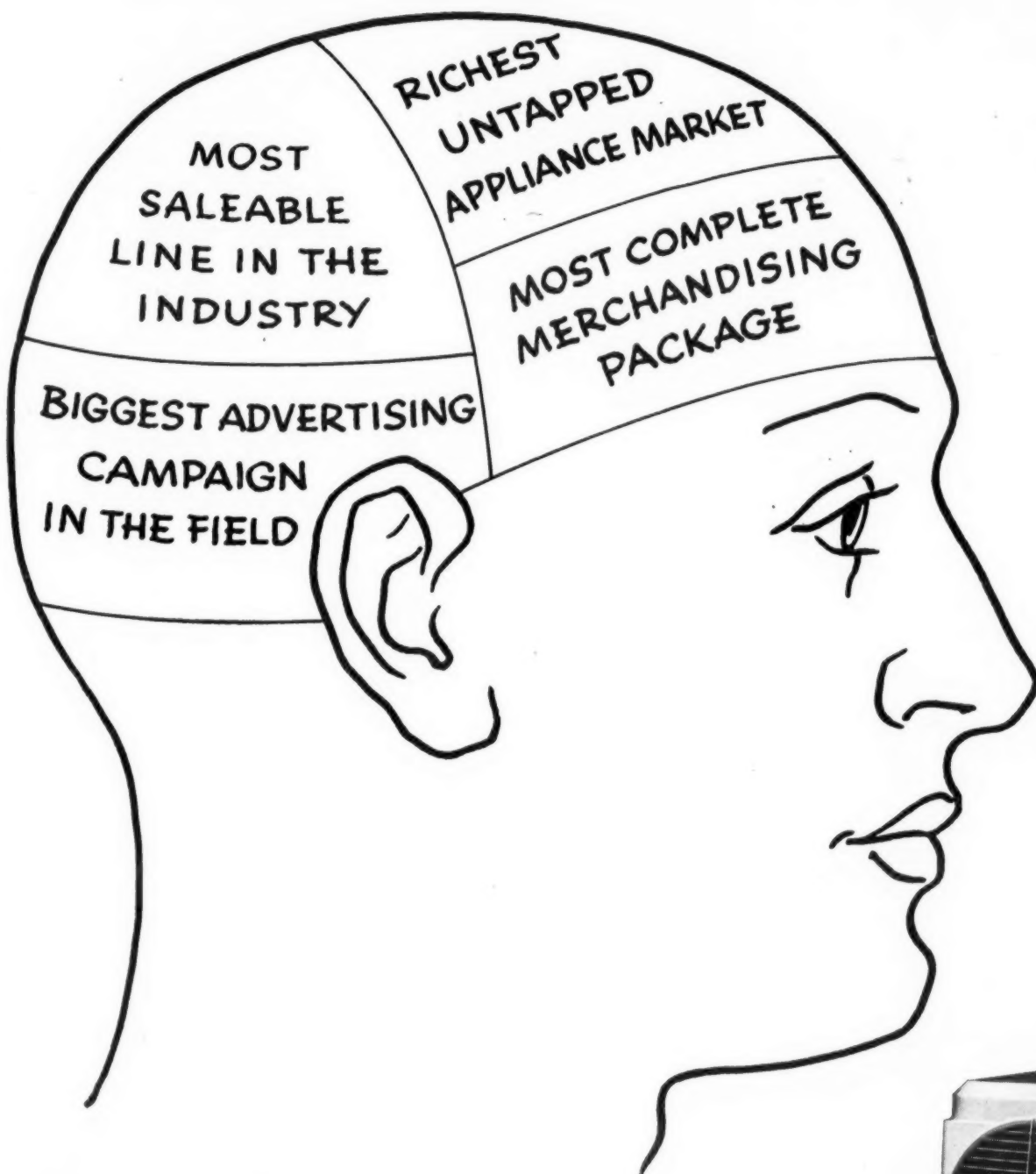
An additional reason for the change, it was pointed out, is the belief that air conditioning units are purchased by a different class of people than those mainly interested in major appliances, and thus require a different type of salesman and a different selling technique.

Kominz Names New Sales Mgr.

ROCHESTER, N. Y. — Ray W. Thomas has been appointed sales manager of Kominz Furniture Co., 289 Monroe Ave., furniture and appliance dealer. He has had 32 years' experience in merchandising furniture and appliances in this area.

LOOK WHAT'S AHEAD

for Fedders Room Air Conditioner Dealers



RICHEST MARKET in the whole appliance field. Homes, hotels, doctors' and dentists' offices, tourist courts, barber shops are all red-hot prospects for Fedders Room Air Conditioners. Sell the customer completely and he'll want one for his office, his bedroom and other rooms!

MOST SALEABLE LINE! Nine models—spearheaded by the sensational new low-priced ⅓ ton unit that provides easy step-ups to the ½ ton, ¾ ton, 1 ton and 1½ ton models. Exclusive consumer benefit features!

BIGGEST AD CAMPAIGN! Hard-hitting ads in LIFE, SATURDAY EVENING POST, TIME, HOLIDAY, NATIONAL GEOGRAPHIC, NEWSWEEK and seven other top-flight national magazines, plus newspaper ads and nation-wide TV spots!

MOST COMPLETE MERCHANDISING PACKAGE! Everything you need for point-of-sale merchandising—folders tailored for each type of prospect—plus two complete direct mail sales campaigns! Don't turn your back on the terrific 1951 profit potential with Fedders. Mail the coupon... or call your Fedders distributor... NOW!

Fedders' new low-price 1/3 ton capacity room air conditioner



fedders

A GREAT NAME IN COMFORT

MAIL THIS COUPON TODAY

FEDDERS-QUIGAN CORPORATION, Unit Air Conditioner Division
Dept. AC-3, Buffalo 7, New York.

Gentlemen: Please send me complete information on how I can make extra profit selling the 1951 line of Fedders Room Air Conditioners.

Name _____

Company _____

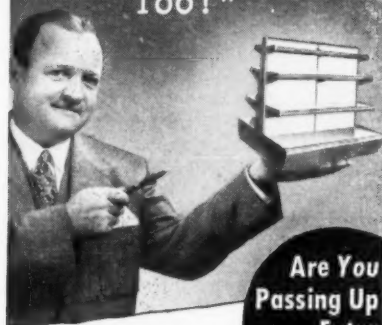
Address _____

City _____

County _____

State _____

"Costs Us No More to Sell Gondolas. Too!"



Are You Passing Up Extra Profits?

At the Ray Wintner Company, San Francisco, one of the largest commercial refrigeration and store fixture distributors, Daley gondolas by Duro are an important money-maker.

"Enable us to sell a complete store job," says Ray Wintner. "Our customers like that. And we make a good added profit at no extra sales expense!"

Some Distributor Openings

If you are East of the Rockies — and interested in adding the Daley Super and Standard gondola lines by Duro to your present refrigerator products — air mail, telephone or wire us today. Sales Manager will be in your territory about mid-April for an interview.

Daley Store Fixtures Division
DURO CONSOLIDATED inc.

EMerson 8-2801
8th Avenue
at Edison Way
Redwood City,
California

usAIRco
Profit Maker
of the
Month

**REFRIGERATED
KOOLER-AIRE**

Complete central heating and cooling in one compact package. Simple to install. Capacities 3 to 40 tons. Saves up to 95% on water cost. Write for details.

FREE BOOK!
Complete air conditioning digest. Ask for "Practical Pointers".

usAIRco

United States Air Conditioning Corporation
3308 Como Ave. S.E., Dept. C Mpls., Minn.

MORE INFORMATION?

Use Handy Coupon
on "What's New" Page
of this issue

Water Chiller--

(Concluded from Page 1)

water at 45°, and uses 360 lbs. of steam per hour, and condensing water at a temperature of 85°. If condensing water is available at temperatures below 85°, or more steam is supplied, the result will be more than 20 tons of capacity.

"This is the largest refrigeration unit Servel has ever built," Gilbreath said, adding that it will not be in competition with the 3-ton and 5-ton "All-Year" air conditioners which Servel is continuing to produce for homes and small commercial installations.

Instead, he said, the 20-ton water chiller is aimed at the many buildings and industries that have a need for controlled temperature and humidity.

"Where waste heat or waste steam is available, operation of the unit for industrial processing needs or comfort cooling and dehumidification can be had at practically no cost," Gilbreath said. "In these cases, waste heat really becomes a by-product loaded with value."

The new unit is designed to deliver refrigeration in the form of chilled water, which is piped to separate air conditioner units, containing filters, coil, and fan. For winter operation, hot water may be supplied through the same piping system.

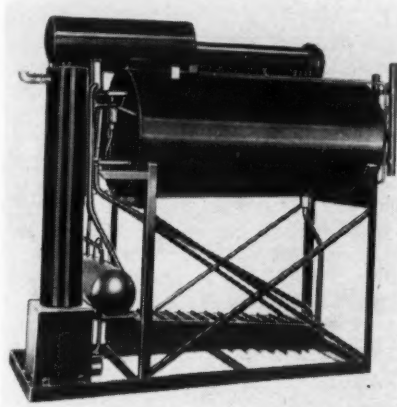
"Servel will furnish the refrigeration 'core,' leaving the choice of water circulating pumps, heat exchange surfaces, blowers, filters, steam controls, and cooling towers to the engineer or contractor," Gilbreath said.

The 20-ton water chiller is described as "exceptionally compact." It is 30 in. wide and less than 8 ft.

long, occupying only 19 sq. ft. of floor area. It can be carried into a building through a standard-width door.

Gilbreath said the units are hermetically sealed and capacity-tested at the factory. There is no field assembly of the equipment.

"By utilizing the absorption principle, with an absence of moving parts, vibration is eliminated. The



Servel absorption-type water chiller. Chiller to be used with air conditioning units in manufacturing processes, has minimum capacity of 20 tons.

unit is exceptionally quiet for one delivering such capacity," he said.

In areas where gas is the accepted fuel for steam generation, the 20-ton unit will logically be operated with gas as the source of energy. Since steam source has no bearing on unit performance, there will be many installations where other fuels, such as oil, coal, or waste materials can be used to fire a steam boiler, according to Gilbreath. District or city steam will provide another choice in metropolitan areas, he said.

Egg Freezing Technique

New Process Creates Main Industry for Nebraska Town

YORK, Neb. — This community of 6,000 population, self-styled "egg center of the nation," paid tribute last fall to the process of egg freezing, which has developed into the town's principal industry.

Through the process of freezing eggs, it has become possible to preserve whole egg, or yolk or white separately, for bulk use by such food industries as bakeries, restaurants.

Development of the technique of egg freezing was responsible for Standard Brands establishing one of the largest egg freezing plants in the country at York. Smaller plants have followed, so that now York is said to be a Mecca for egg producers over a large area in the midwest.

The idea of preserving eggs by freezing is attributed by local researchers to H. A. Keith of Boston and W. T. S. White of Clarinda, Iowa, back in 1889.

Originally the whole egg was

placed in a tinned container and put in a freezer where it remained until the mass became solid.

Today, the process goes like this: When the eggs are first collected they are examined under stringent regulations to eliminate dirty and cracked ones.

Next, they go to a room where, by means of a candling device, each egg is carefully inspected. Those not suited for freezing are removed. Each egg accepted is separately broken, inspected, and deposited into a small container and passed on for further processing.

Prior to freezing, operators churn the egg to make a homogeneous mixture so that the finished frozen product is of uniform composition. The mass is then put into containers for freezing, with the 30-lb. size being the most popular.

When frozen eggs are delivered to bakeries or other customers, the can

of eggs is placed into a trough through which a circulating warm water bath flows. The can remains in this bath until the entire mass becomes liquid.

Standard Brands points out, however, that a more modern method of thawing is to shave or crush the mass of frozen eggs. This speeds the thawing process and provides a more uniform relationship of water to solids. When York staged its "egg festival" last September, the affair was such a success that merchants have decided to make it an annual one. The celebration featured an egg parade, the crowning of an egg queen, and an egg dance.

Merchants tied in with an egg script that was good for 5% on any merchandise purchased during the festival. Farmers received \$1 in script for every dozen eggs they turned in to their producer during the two-day celebration.

Refrigerated Storage of Lithograph Plates Cuts 'Dark Reaction' from High Temperature, Humidity

NEW YORK CITY—Refrigerated storage of lithograph plates for the purpose of reducing "dark reaction" is advocated by the Lithographic Technical Foundation, according to recent reports published in a national printing journal.

Through an extensive program of research, the foundation has discovered that high temperatures, as well as high relative humidities, can raise havoc with lithographic plates.

After a three-year study of more than 2,500 test plates, Lithograph Technical Foundation reports that temperature, which has so often been ignored, was found to be almost as important a variable as relative humidity.

The magazine reports that dark reaction is a tanning or hardening of the plate coating that starts as soon as the plate is coated and proceeds until the plate is developed. It takes place even if the plate is kept in the dark and never exposed. It has been found that when a plate is coated and stored at ordinary working room temperature and relative humidity, dark reaction eventually hardens its coating completely.

Dark reaction has the effect of pre-exposing or supersensitizing the coating. The longer the plate stands, the less exposure it needs to produce the required amount of hardening or halftone dots of the desired size.

The speed with which dark reaction takes place determines how long a coated plate can be allowed to stand and still give satisfactory performance on the press.

Up to the present time, relative humidity has been considered as the most important factor governing dark reaction, and many plate making systems have been based upon variations in relative humidity alone. In view of its recent findings, Lithograph Technical Foundation now considers such systems inadequate for full control of tone values on the finished plate. Any system that does not consider changes in temperature and other variable factors does not show consistent results.

Research disclosed that in temperatures ranging from 78° to a high of 108° usually found in the whirler (plate drier) each rise of 10° F. increased the dark reaction rate 2.5 times, in addition to any increase caused by high relative humidity.

It is thus recommended that when humidity is high, heat in the drier should be turned off as soon as the plate is dry. It is also recommended that the whirler be ventilated. The safest rule seems to be not to heat the plate more than necessary.

It was found that refrigerated storage of plates stops dark reaction for all practical purposes. Plates kept at temperatures between 40° and 50° can be stored safely for several weeks, even at high relative humidities. When a suitable refrigerator is provided, plates can be pre-coated, ready for use, several weeks before they are exposed. At the Lithograph Technical Foundation laboratory, both deep etched and albumin plates coated eight weeks before exposure gave satisfactory results.

The research also disclosed, however, that cold plates had a very low sensitivity to light, so that refrigerated plates should be allowed to warm up to normal platemaker temperature before exposure. The warming up process usually takes place in about one hour.

Sweden Freezer Appoints 2 Washington State Dealers

SEATTLE — Appointment of two dealers in the Pacific Northwest by the Sweden Freezer Mfg. Co. was announced recently.

These firms are the Langford Refrigeration Co. located in Everett, and Cheatham & Carter of Olympia.

The Langford firm was founded by W. L. Langford in 1936 and has been in operation since. In addition to the Sweden line, the firm carries Koch refrigerators.

Cheatham & Carter was formed in 1930 by F. C. Cheatham as a commercial refrigeration sales and service firm. R. T. Carter joined the expanding firm as a partner in 1945.

KRAMER

Roof Spray Systems

Surface Temperatures Can Be Lowered as Much as 50°,
Refrigerating Capacity Requirements Cut

PHILADELPHIA—"A roof spray of the rotating type can be made to maintain a surface temperature of about 100° F. on a roof which would normally have a surface temperature of 150° F. during the condition of maximum incident solar energy," states G. E. Sutton of the University of Florida.

Such a roof could "reduce the required refrigeration capacity for an air conditioned building and permit savings in material and installation costs," he told the American Society of Heating & Ventilating Engineers at its 57th annual meeting here.

"In any type of installation, the [spray] system can only operate economically if it is thermostatically controlled," Sutton said in reviewing experiments conducted at the Engineering and Industrial Experiment Station of the university.

MANY VARIETIES AVAILABLE

"Many varieties of required devices such as motorized valves, solenoid valves, and temperature controllers are available and can be arranged to best suit the individual installation. In most cases, electrical controls can be conveniently used or, where electricity is undesirable or unavailable, pneumatic controls may be used.

"For very large roofs, zone control should be used. It is recommended that the piping be of brass or copper to prevent corrosion. This is especially important if any other than city water is to be used."

It is Sutton's contention that sprays are more effective than water pools for cooling roofs. Where roof sprays would maintain 100° F. temperatures, a 2-in. pool would hold 108° F., a 6-in. pool, 103° F.

Roof pools present certain structural problems because the roof must support that additional weight not present when sprays only are employed, he also indicated, and could breed mosquitoes.

SPRAY WATER PRESERVATIVE

"Spray water has a preservative effect on asphalt types of roofing by reducing temperature change and lowering surface temperatures," he adds. "There is, consequently, less thermal stress, less vaporization of volatile oils than for unsprayed roofs, and there is no thermal shock from sudden thunderstorms."

No study was made of roof life, he said, but "the roof we're using appears to be in better shape than comparable roofs of the same age where no sprays were employed."

Spillage of cooled air from the roof also made some reduction in the surface temperature of the walls of the building, he commented.

Experiments conducted by Sutton were made on two roofs over sections of a machine shop, each of which had a slope of about 1/2 in. per ft. The roofs were of 2-in. wood sheathing over 8 by 10-in. wood framing. Two-ply asphalt roll roofing was laid over the sheathing and covered to about 1/2 in. with asphalt and slag.

Over one roof two rotating sprays were installed.

"They were originally of the four-nozzle rotating lawn type, having fixed nozzles of four different types for uniform coverage. These sprays were replaced with the adjustable two-nozzle rotating type which could be adjusted for throw and fineness of spray. The throw was set at about 18 ft. with medium spray."

MOTORIZED VALVE USED

The sprays were controlled by a motorized valve which was actuated by temperature controller. Bulb of the latter was buried in slag and asphalt topping to avoid short cycling of the spray system.

By means of a 10-point temperature recorder, temperatures were recorded of the outside air dry bulb, outside air wet bulb, spray water, sprayed roof surface, unsprayed roof surface, ambient at control bulb, ceiling surface under sprayed roof, air at 6 and 12 in. below the ceiling, and 5 ft. above the floor (breathing level).

Measurement was also made of heat flow through the two roofs, water flow, and incident solar energy.

Studies of the water consumption would indicate, Sutton said, that a safe design figure would be 40 gals. per sq. ft. per season, the season being from May 1 to Sept. 28.

A moderately fine spray is recommended, but it should "not be so fine as to be a mist."

"A mist would allow too much evaporation in the air prior to impinging on the roof. A high wind drift loss would occur thereby decreasing efficiency and creating a possible nuisance. Finer sprays would require less water for operation and greater efficiency should be expected," he said.

With regard to the effects within the spaces beneath the roofs, "no difference was noticeable at any time in the wet-bulb temperatures in the two spaces," Sutton declared.

"During the time when the spaces were well ventilated, no difference was noticeable in the dry-bulb temperature. Observations on a day when

the space was closed showed a temperature difference of slightly more than 1° F.

"Despite the low temperature differential between the two spaces, a considerable difference in comfort existed," Sutton claimed. "On a day when the air temperature was 93° F. d.b. and 78° F. w.b. and the space ventilated, the space under the sprayed roof was reasonably comfortable."

"In the other space, exposed parts of the body such as face and arms felt decidedly hot and uncomfortable in spite of the air movement."

Sutton emphasized that "the most important features of the spray installation are the sprays and the spray control. A wide variety of spray heads is available."

Long Way To Go Before Dust Removal Reaches Perfection, Lewis Tells ASRE

CHICAGO—Filtering of air is being improved, but perfection in dust removal is still not possible and this is one part of the business that receives the most complaints in forced air circulation systems, S. R. Lewis, veteran consulting engineer, told the Chicago ASRE section.

The space between a suspended ceiling and the structural ceiling should not be used to distribute air unless there is a means for cleaning, Lewis said. Dust systems should also be accessible for cleaning. Exhaust fans are necessary, too, for exhausting part of the air in the return air supply system, because systems built with a supply fan only will seldom perform under all conditions as desired.

Discussing the "Consulting Engineer's Role," Lewis defined his type of consultant as one who serves as an independent advisor to the indi-

vidual consumer and the architect in a manner so as to provide adequate construction for electric power, illumination, plumbing, heating, ventilating, and automatic temperature control to permit successful operation of the structure, and to provide for good maintenance of the equipment.

The promotion of human comfort, Lewis said, could be best obtained by balancing the heat transfer load across ceilings, walls, and floors with a built-in source of heat provided by warm water coils, warm electric wires, or warm air passages to compensate for this heat exchange.

This design, he added, would also be of value in summer cooling since large quantities of cold air at too cold a temperature for human comfort would not be required. He cited Dr. Mills' reflective insulated house in Cincinnati as another example of modern pioneering.

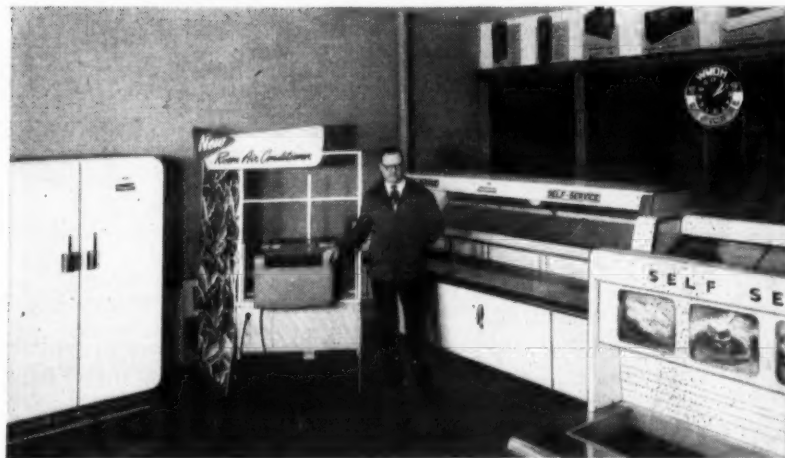


This success story has a happy beginning!

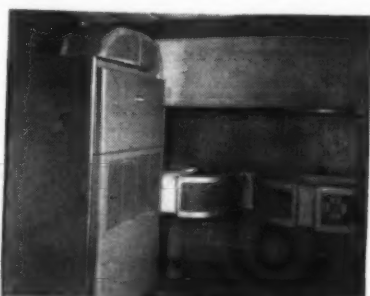
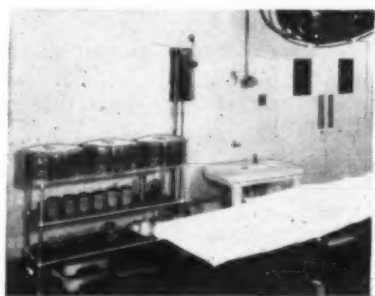
This story starts in 1946—in a basement in Hamilton, Ohio. That's where Allied Refrigeration Company began doing business as a commercial refrigeration and air conditioning dealership.

And it was a happy beginning. As Howard Pearson, the owner of the firm, says: "We got started on the right foot—with a Frigidaire franchise. That meant we had some really big selling advantages—a complete line of top quality products, the fine reputation of Frigidaire and General Motors, plus sound advertising and sales plans. And we've had a lot of wonderful cooperation from our Frigidaire District Headquarters on all of our problems."

Today, five short years after its happy beginning, Allied Refrigeration has left its first basement home far behind. The firm now occupies a big, good-looking showroom in one of Hamilton's modern store buildings. Best of all, steadily increased sales have moved Allied into the front rank of Hamilton's commercial refrigeration and air conditioning dealers.



"Frigidaire equipment requires 20% less servicing than other makes," says Frigidaire dealer, Howard Pearson, shown here on his selling floor. "That kind of dependability is doing us a lot of good. It's our assurance of continued sales success. Once he's used Frigidaire equipment, each new customer becomes a good prospect for other products in the Frigidaire line. He also helps us to reach other prospects, and paves the way for more sales."



Adaptable equipment teamed up with shrewd selling resulted in this air conditioning installation for the operating room of Mercy Hospital, Hamilton, Ohio. This unique application of Frigidaire self-contained units, planned and sold by Allied Refrigeration, saved the hospital thousands of dollars over other air conditioning estimates.

Frigidaire



America's No. 1 Line of Refrigeration and Air Conditioning Products

INSIDE DOPE

by GEORGE F. TAUBENECK

(Concluded from Page 1, Column 1)
just ask for Joe. I'll see that you're well taken care of."

Tact

Horrified, the Head Waiter of a swanky restaurant watched a newcomer tuck a flowing length of white napkin under his chin.

Post-haste he dispatched a veteran waiter to this table, with instructions to be diplomatic but firm.

Napkins, in this restaurant, were lapped, not tucked.

"Excuse me, sir," approached the waiter. "Do you want a shave, a haircut, or a shampoo?"

Spade a Spade

Obviously in a tizzy, the shy coffee shop patron glanced hither and yon around the room. Tapping his feet on the floor and drumming his fingers on the maple table top, he squirmed and fidgeted nervously.

At length, taking a deep and bracing breath, he summoned the hostess.

"Will you please tell me where the smoking room is located?" he gulped.

"Oh, don't worry about that, Mister," soothed the hostess. "You can smoke all you like right here at the table."

Campbell's Cheese

Campbell Campbell, who sold cosmetics and perfumes to department stores, covered the state of Michigan for his wholesaler. Because his most important customers were in Detroit, he spent two days a week in that city, and always stopped overnight at the Ft. Shelby hotel.

Possibly it was a psychological reaction to his delicately scented line of products. Anyway, Campbell Campbell doted on limburger cheese. He loved the stuff even more, no doubt, because it seemed difficult to procure good limburger in Michigan.

Shortly before he retired one night a Ft. Shelby bellhop brought up a prize—two pounds of the malodorous cheese.

Campbell ate all he could, but had more than a pound left. Not wanting to pack the remainder in his suitcase, and too greedy to leave it for someone else, the salesman secreted the limburger in a potted geranium.

Four days later the Ft. Shelby hotel manager wired him:

"We give up. Where did you leave it?"

How To Save Money

Into the Ritz hotel's second-best restaurant sauntered a jaunty young man. Greeted by the hostess, he pulled out two dollar bills and handed them to the amazed greeter.

"I'm coming in here tonight with two young ladies," he whispered, "and when I ask for a table I want you to declare that they are all taken. You see, I can't afford your prices."

It's a Dog's Life

Anyone can run a newspaper, a night club, or a hotel, they think. And how wrong "they" are. Like managing editors and night club maitres d', hotel executives lead a dog's life. In illustration:

Pat Delehanty, manager of the Hotel Fort Oakland, faced his daily crisis—a different crisis, as usual—but he had to face it, or else.

At 7:00 a.m. he called a conference of the waitresses in his coffee shop.

"Girls," he importuned, "smile brightly today. Accept dates. Indulge your patrons. Look pretty, be pretty, act seductive."

"Why," nasaed an old-timer.

Warned Pat:

"I've just tasted the beef stew and the bacon."

Testiness

A disgruntled-looking tourist was seated at a dining table in a Mississippi village restaurant. After a careful study of the eatery's bill-of-fare, his look of deep dissatisfaction became even more pronounced.

Pointing a disdainful forefinger at an item appearing on the menu, he inquired of the solicitous waiter, "What is this here 'sage hen'?"

"It's a local fowl," proudly explained the waiter.

"Has it got a pair of wings?" asked the peevish patron.

"Oh yes," replied the eager-to-please waiter. "This kind of bird is able to fly quite efficiently."

"Then I wouldn't touch it with a ten-foot pole," growled the customer.

"Anything that can fly and still remains in this burg isn't fit to eat."

The Ultimate Egg Story

Sedately and complacently, a middle-aged couple entered the late Ralph Hitz' Hotel New Yorker coffee shop, and were seated by the hostess. A neatly-clad waiter padded noiselessly up to the new arrivals and requested their orders.

"We'll each have two eggs," instructed the gentleman, "two fried on one side, and two fried on the other."

"Yes, sir," agreed the waiter absent-mindedly, as he turned toward the kitchen.

Quickly he did a "double take" about-face.

"Beg pardon. Would you mind repeating your order? I'm sure I misunderstood."

"I said," repeated the customer, "four eggs, two fried on one side and two on the other."

"Yes, sir," sighed the waiter, hunching his shoulders resignedly and puzzledly.

After a few moments had elapsed, he returned apologetically.

"I'm terribly sorry, sir," he whispered, bowing his head, "but the cook wants you to be more explicit."

"Look brother," answered the customer, in carefully measured tones, "We each want two eggs. Two fried on one side, and the other two fried on the other two sides. Is that clear?"

This time the waiter did not deign to reply. He staggered back to the kitchen, mumbling to himself.

Suddenly a violent commotion occurred in the vicinity of the swinging doors which connected the coffee shop to the kitchen. The waiter bounced and rolled through the doors, accompanied by several flying raw eggs. Brushing his spattered and rumpled suit, he "snuk" back to the couple's table. (If he'd been a dog, his tail would have been between his legs.) "Please, sir," he gargled humbly, "would you mind switching your order to scrambled eggs? The cook and I have had a slight misunderstanding."

One Eye Open

Familiar to all small hotel and restaurant patrons are the colorful phrases used by waiters when relaying orders to cooks. Quote and unquote:

While traveling through a southern state, Joe Blow checked in at a declassé hostelry's "coffee shop." A frilly blonde shuffled slowly out of the kitchen to take his order.

"Two fried eggs, toast, and coffee," he ordered curtly.

"How do yo'all want them eggs, honey," drawled the waitress, "blind, or starin' up at ya?"

Best Claw Forward

Complained the diner:

"The tastiest meat of a lobster is found in its claws. And here you bring me a lobster with one claw

missing." "Sir," apologized the waiter, "your lobster was in a fight—in our own aquarium. We serve only the freshest. . . ."

"Take it back," decibelled the diner. "Bring me the winner of that fight!"

Big Words

An arrogant coffee shop waiter stuck a menu in front of an equally haughty regular patron of the Arteriosclerosis Richmond hotel.

"Wottle you have?" he demanded.

"I really don't know," she lorgnetted. "What would you recommend, servant?"

"The pickled pigs foots ain't bad."

"My good man," was the scornful reply, "are you proposing that I eat something out of an animal's lower extremities?"

"Ma'am," shot back the waiter, "you had eggs for breakfast today, didn't you?"

Read it again, pal.

Oh, No-o-o!

Garry Gourmet tackled his steak with anticipation . . . then with determination. But when the leather-like chunk of beef resisted even forcible knife attacks, Garry summoned his waiter.

"See here," Garry badgered, "this steak is absolutely the toughest piece of meat I have had in years. Take it back to the kitchen and bring me another."

The waiter picked up the patron's plate and examined the steak.

"I'm sorry, sir," he announced, "but I can't return this steak. You see, you've bent it."

Ripe History

"Yass, yass," rambled on the garrulous waiter. "This hotel sure has a history. Washington slept here, y'know, and General Robert E. Lee sat right at this table. I could tell you lotsa stories about this place."

"Ummm," grumped a cynical diner. "What is the historical background of the moldy old piece of pie you served me?"

Sharp as a Tack

Noticing a menu's proud boast, "we serve steaks and chops from every variety of animal," a wag ordered a cutlet of elephant.

The nonplussed waiter consulted his maitre d'hotel, and brought him back to the table.

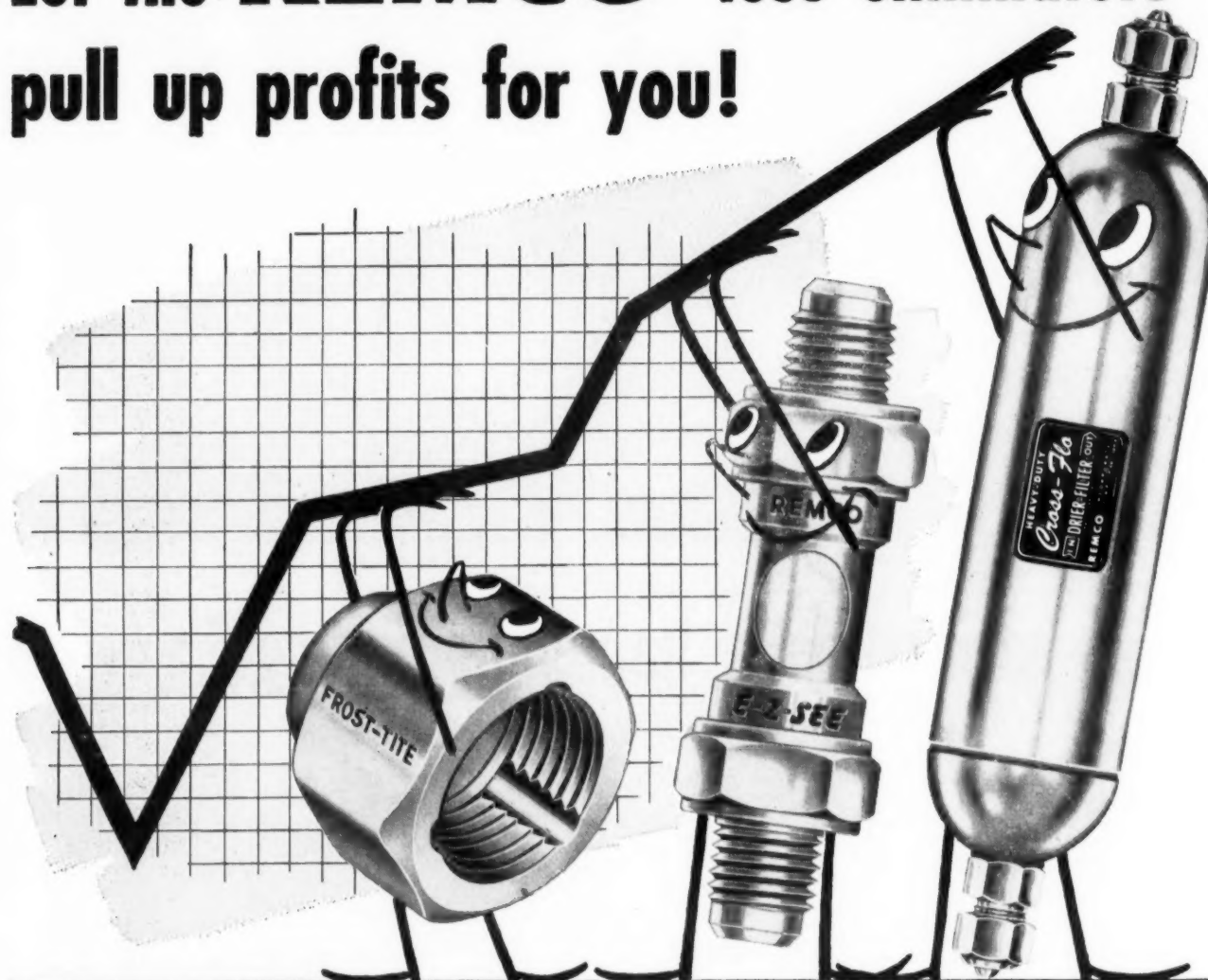
"Sorry, sir," the latter quick-triggered, "but for just one cutlet we can't afford to butcher our elephant."

We Aim to Please

Patron: "I want one dozen oysters on the half shell. Bluepoints, mind you, from Nova Scotia. Not the biggest ones, but oversize. Serve them packed in ice. And don't keep me waiting."

Waitress: "Right-O, perfesser. Wonnem with pearls or without?"

Let the REMCO "loss eliminators" pull up profits for you!



FROST-TITE eliminates losses from loosened and cracked flare nuts —

In Frost-Tite flare nuts, forged frost-relief slots provide relief for expanding ice within the nut, and thus no force is created to cause loosening, splitting, or cracking. Cost no more than ordinary flare nuts—are ideal for use anywhere in the system.

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With E-Z-See, you are assured of the following definite advantages: (1) E-Z to see thru—both sides of the body are open to let in light (2) Positively leakproof—can't leak because springs automatically maintain just the right force to form a positive seal around the glass (3) Perfectly Safe—glass is protected for safety at pressures up to 500 psi.

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Current Literature Available

To obtain further information on the literature listed below, please refer to key number preceding listing. Please use the "Information Center" form on "What's New" page.

Westinghouse Range Facts In New Booklet

—KEY NO. M-340—

MANSFIELD, Ohio—A new 40-page fact finder booklet designed to give range dealers and salesmen complete and concise information on the 1951 range line is now being issued by the Westinghouse Electric Appliance Division.

A quick presentation of the new line is given with large product illustrations accompanying the facts and figures on each range model from the top of the line deluxe "Commander" to the low-priced "Rancho."

One section of the booklet is devoted to why the features are important to the consumer and not so much to how the ranges are built and where the features are located. Production line photographs, small feature cuts, and fast reading copy combine to tell the story.

Detailed instructions for range display lighting plus helpful demonstration ideas are also presented in the booklet.

Commercial Guide Uses Layman's Terminology

—KEY NO. M-341—

BOSTON—A 20-page "Planning Guide for Commercial Air Conditioning" which presents technical information to the businessman in understandable, down-to-earth terms has been prepared by Westinghouse.

The reader is first introduced to the functions an air conditioning system should perform. He is then shown the components needed to do this job.

What to expect from an air conditioning system comes next; after that, factors to consider when actually planning a system. Where and when to use a "within-the-space" conditioner, a factory assembled central plant type unit, or a field as-

sembled system are covered in some detail.

Illustrations of each kind of equipment are included in the guide (Booklet B-5159) along with photographs of interiors where these are installed. Details and salient features of Westinghouse equipment are provided.

Victor Broadside Is Self-Mailing Piece

—KEY NO. M-342—

HAGERSTOWN, Md.—A new dealer broadside on its complete line of refrigeration equipment, has been prepared by the Victor Products Corp.

The broadside, headlined "Now It Can Be 'Tolled'" is done in two colors and can be used as a self-mailer by sealing with a stamp and addressing in the space provided.

Creamery Package Tells Benefits of Ice Builders

—KEY NO. M-343—

CHICAGO—The practical as well as the technical aspects of the use of ice builders to provide economical sweet water cooling is the subject of a new eight-page booklet by The Creamery Package Mfg. Co.

The booklet describes how ice builders "store cold" in the form of ice built up on coils to furnish a reservoir of refrigeration to level out peak cooling loads and increase flexibility of operation. It indicates typical conditions in which use of an ice builder is advantageous. Specifications and descriptions of various capacity ice builders are also included.

Coleman Issues Catalog On Home Heating

—KEY NO. M-344—

WICHITA, Kans.—A catalog on Coleman home heating equipment, which is a reprint of the Coleman section in the 1951 edition of Sweet's Builders' File, has been made available to the trade by the Coleman Co., Inc., here.

The catalog contains complete specifications, descriptions, and illustrations of the firm's gas and oil furnaces, wall and water heaters.

Eutectic Welding Alloys Wall Chart Available

—KEY NO. M-345—

NEW YORK CITY—Containing complete specifications on close to 100 different Eutectic Low Temperature welding alloys used in welding, brazing, and hard surfacing of steel, alloy steels, stainless, cast iron, brass, bronze, copper, aluminum, magnesium, zinc die cast, etc., a new reference chart is now available without charge from Eutectic Welding Alloys Corp. here, it was recently reported.

A revision of its 1950 wall chart, Eutectic's latest edition is in the form of a handy six-page folder which can be filed or bound or unfolded to an 11-in. by 23-in. chart for wall mounting, the company stated.

Detailed information is given for each alloy and electrode, covering: its composition; heating facilities which can be used; metals on which to use; type and preparation of joint; pre-heating of parent metal; color match rating with metals for which listed; approximate heat and corrosion ratings, etc.

Included also, is a full page listing of "1001 Ways to Save In Your Plant," covering a wide variety of every-day welding applications and the alloys recommended for maximum efficiency in each circumstance.

Pattern Development Book Offered by Armco

—KEY NO. M-346—

MIDDLETOWN, Ohio—A revised edition of "Short Method of Pattern Development," a handbook for sheet metal workers, is now being offered to the trade by Armco Steel Corp., at 30 cents each.

The book was written by a sheet metal contractor, Ralph W. Poe, expressly for sheet metal workers. It explains the "rollation" method of layout and tells how it is used to make many types of patterns.

Many photographs and sketches are used to illustrate the layout of square to round transitions, rectangular to round fittings, Y fittings, T joints, angular joints, and other parts.

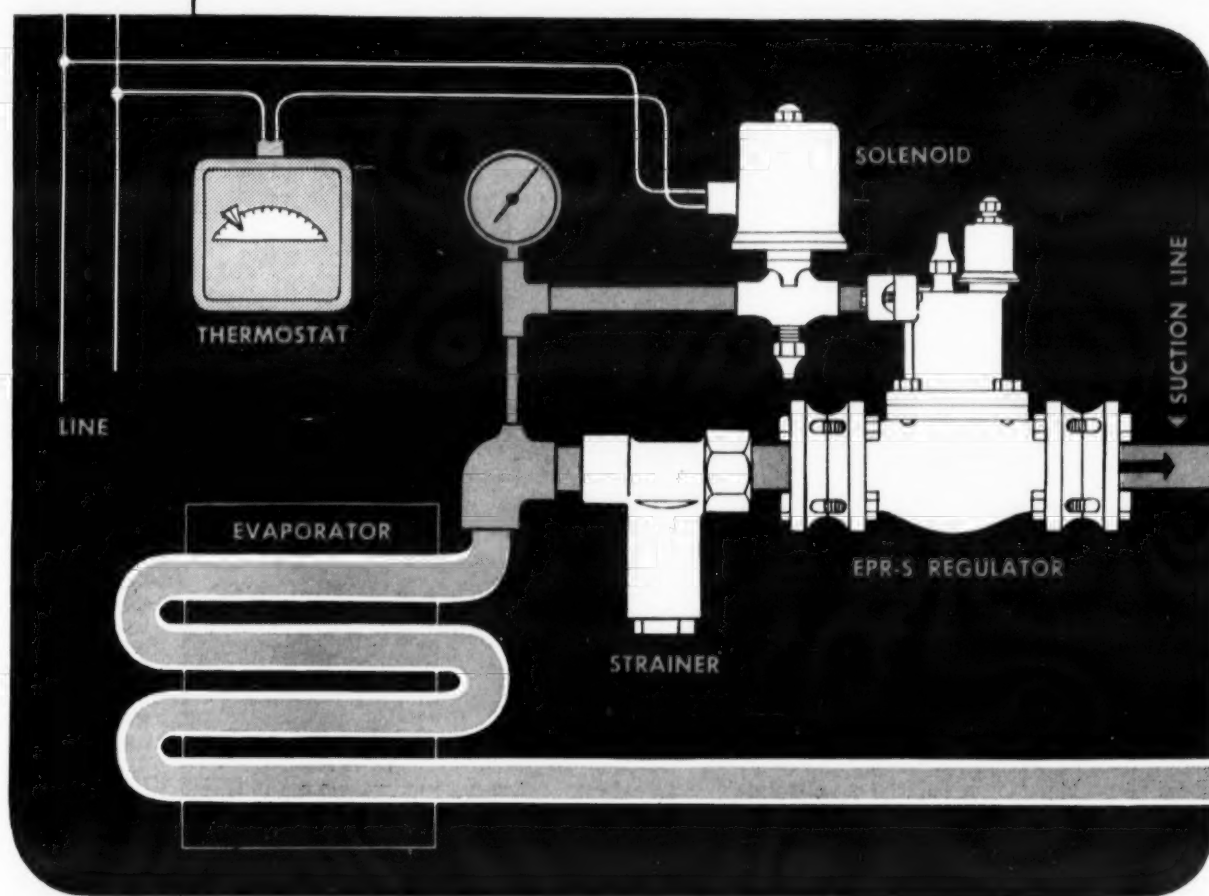
Worthington Bulletin Describes 'F-12' Units

—KEY NO. M-347—

HARRISON, N. J.—Three bulletin sheets describing Worthington's "Freon-12" refrigeration units have just been made available by Worthington Pump & Machinery Corp., here.

The bulletins are numbered C-1100-S50C, C-1100-S59B, and C-1100-S53C. They give complete specifications.

ALCO SOLENOID-EPR COMBINATION for TEMPERATURE DIFFERENTIAL CONTROL



Try this performance-tested ALCO team—the EPR for accurate evaporator pressure regulation, plus the Solenoid for positive suction stop. Together, they solve the toughest close-control problems.

This ALCO Solenoid-EPR Combination is widely used on installations where pinpoint control is important: in the handling of plasma, biologicals, plastics and synthetics, and for food preservation on commercial and combatant ocean vessels throughout the world.

Try it on your next job where close control counts.

For further details, write for Bulletin 183.



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Concrete Improvement!

New Development May Cut Cost, Enlarge Field for Radiant Heating

PITTSBURGH—A new development in concrete, which is expected to substantially reduce the cost of radiant heating and broadly enlarge its field of application, has been perfected by Products Planning Co. here, Donald H. Butler, owner, reports.

The development will make radiant heating highly economical, Butler asserted, and will extend its many advantages to most types of new buildings without its previous price handicap.

Basically the invention comprises a formula of special aggregates which are blended and then added to concrete and other plastic masses.

BLENDED AGGREGATES BOOST HEAT CONDUCTIVITY

The blended aggregates greatly increase the heat conductivity and also the wearing qualities of concretes sold in commercial grades.

The higher heat-conductivity of the new concretes means a saving in pipe for radiant heating of from 25 to 30% per installation as compared with the quantity of pipe required with standard concrete. Cost of the product will be only about 10% of the total savings achieved.

The basic products used are commercially available, although never previously applied to this purpose. They will be supplied by a major Pittsburgh area firm, for which the development opens an entirely new

market. Products Planning Co. will license the manufacture of the finished product.

RADIANTROL VALVE ALSO DEVELOPED

The company has been working on increasing the economy of radiant heating for the past five years, Butler said. Initial contribution was its patented Radiantrol valve now widely used for controlling water flow in radiant heating pipes.

However, the greatest opportunity for cost reduction lay in overcoming the comparatively low-heat-conductivity of commercial concretes which require large amounts of piping.

The new development solves this problem by adding aggregates which increase the flow of heat. The resulting concretes which have been tested by Pittsburgh Testing Laboratory withstand pressure of at least 4,200 lbs. per sq. in.

An originally unforeseen feature of the development has been that the aggregates impart a marked increase in concrete wearing qualities. Various mixtures will be made available to meet severe traffic conditions in plant floors and for high-density traffic highway areas.

When the mixtures are used only for increasing wearing qualities, and heat transfer is not involved, they can be applied to the top surface layers of concrete, thus holding costs to a minimum, Butler explained.

The new product will be available for shipment from Pittsburgh in a few weeks in the form of a dry blend to be added to the wet concrete at the time it is mixed.

Distribution plans are not complete. The product will be distributed by licensees of the patent, who in general will sell through plumbing supply houses for the heating trade and through building supply jobbers for the building industry.

Fedders Names Ledbetter Regional Mgr. in South

DALLAS—W. L. Ledbetter, regional sales manager in Dallas for the unit air conditioning division of Fedders-Quigan Corp., has been promoted to regional manager in the entire south, with headquarters in Dallas.

W. J. Chambers succeeds Ledbetter as regional sales manager, it was announced, and he will contact distributors in Texas, Oklahoma, Louisiana, and Arkansas.

Chrysler Airtemp Appoints Apollo as Distributor

NEWARK, N. J.—Appointment of Apollo Distributing Co. here as distributor for Chrysler Airtemp room air conditioners and dehumidifiers has been announced by Bernard Walsh, general manager of Apollo.

The company, which also handles Crosley products, covers a territory which includes 14 counties in northern New Jersey, and Orange and Rockland counties in New York.

Parking Lot Offices Get Air Conditioning



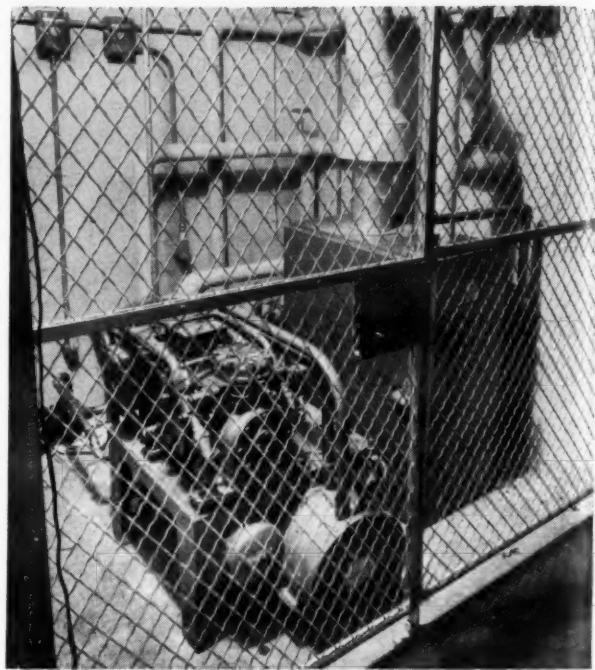
OKLAHOMA CITY—One of the first recorded instances of the air conditioning of a parking lot's offices was made recently by the James Hotel Corp., owner of the Skirvin hotel in Oklahoma City.

Units used in the job were an RC-34-D "Flow-Cold" liquid chiller and an Acme TCJ-2A cooling tower at the Uptown parking lot. The building was recently built and consists of two-level parking at the present time. However, this may be expanded in the future when the need for additional parking space arises.

The installation was designed and engineered by Hudgins, Thompson, Ball & Associates, architects, and by Collins & Gould, engineers, all of Oklahoma City. Chilled water is circulated for summer air condition-

ing and forced air convectors are used for outlet of conditioned air.

The design conditions were 100° d.b., 78° w.b. (outdoor) and 80° d.b., 67° w.b. (indoor). The load is approximately 3 tons.



Building Research Advisory Group Urges Preparation of Climatological Atlas

WASHINGTON, D. C.—The preparation of a climatological atlas of the United States as an aid to the building industry and to the defense program was urged recently by the Building Research Advisory Board of the National Research Council.

The B.R.A.B. passed a resolution recommending that "the need for preparation of such an atlas be presented as a matter of high priority to the appropriate Federal agencies and in particular to the Department of Defense."

The board stated in the resolution that it "is convinced that such an atlas could save its cost annually in Federal building operations alone."

It added, "Equal or larger benefits might be expected in the development of the national defense notably with respect to highway, industrial, and

military establishments and air defense problems."

The resolution was adopted following a report by Thomas H. Urdahl, chairman of the B.R.A.B. committee on climatic research. The committee is studying the need for data to enable architects and engineers to adapt buildings to wide climatic variations in the United States.

Such improved engineering, according to the report, would result in conservation of fuel and building materials, and reduced maintenance costs on both buildings and their contents.

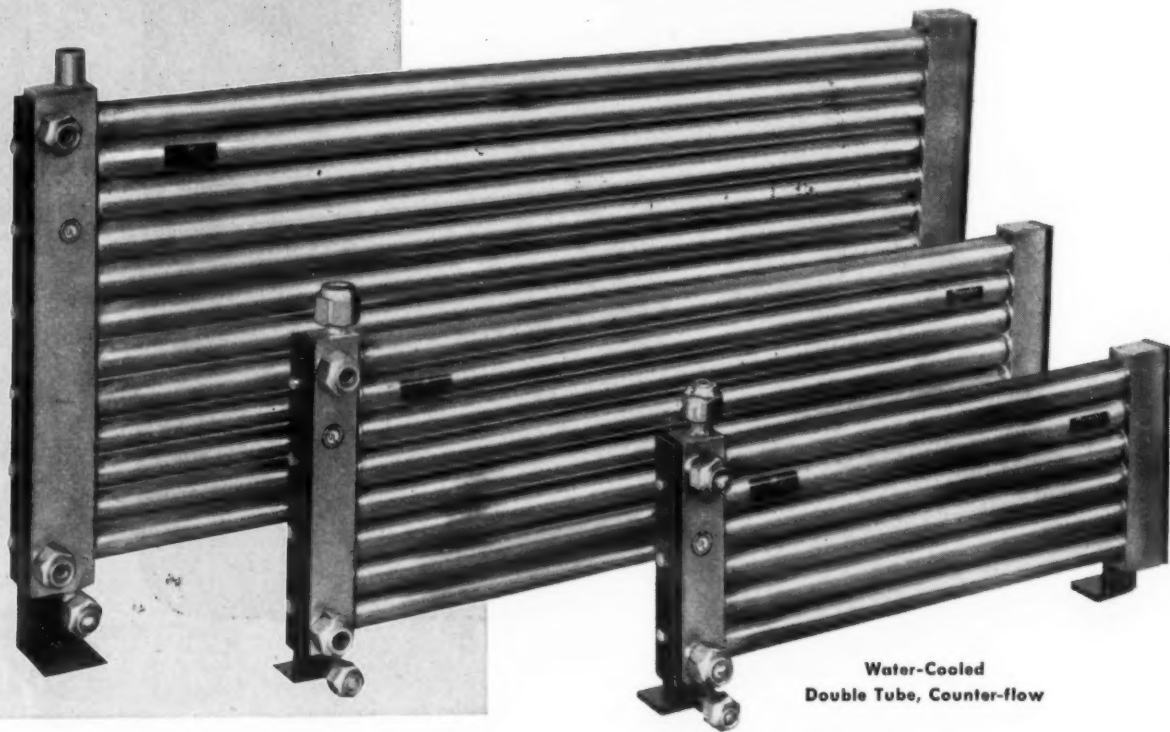
The report pointed out the absence of accurate data on U. S. climate, and the potential usefulness of a comprehensive climatic atlas in various programs related to defense as well as to construction.

No. 1 Requirement—in any size unit

an

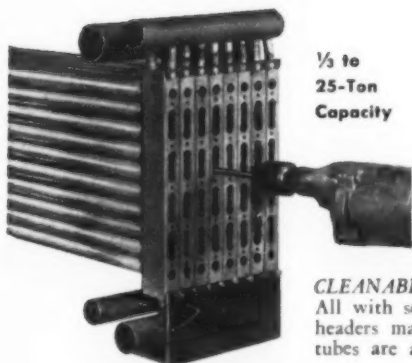
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Water-Cooled
Double Tube, Counter-flow

Regardless of whose condensing unit you buy—and regardless of its size—your first "must" is to insist that it have a CLEANABLE (water-cooled) condenser to help you maintain new-unit efficiency indefinitely. When you realize that use of a simple spiral tool, doing a thorough mechanical cleaning job, can always restore copper-water surfaces to their original heat-exchange efficiencies, you won't settle for anything less than a cleanable condenser. And especially so now since most major manufacturers recognize the demand for "Cleanable", and are equipping their units accordingly. Remember too, you can now count on surprisingly low initial cost that is made possible by Halstead & Mitchell's tremendous high productive capacity.



1/2 to
25-Ton
Capacity

CLEANABLE—in all size capacities. All with seamless copper tubes, brass headers machined and brazed. Water tubes are accessible from either end.

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Temperature Controls

Give accurate control for a long period because of their simple, rugged construction. The temperature of the surrounding air does not affect the setting. Available in different ranges between -50 F and 500 F with remote bulb and capillary, with immersion bulb, or in a room thermostat. Pilot duty rating is standard but ratings up to 1 1/2 hp at 220 volts are also available.



ALLEN-BRADLEY CO.
1313 S. First St. Milwaukee 4, Wis.

ALLEN-BRADLEY
MOTOR CONTROL



Combination Self-Serve and Service Case for Meats, Dairy Products Designed To Conserve Floor Space

PANAMA CITY, Fla.—A combination service and self-service display case has been custom-built for the Maney & Wilder supermarket here to economize on floor space.

The unit consists of an 8-ft. refrigerator, similar to a standard service meat case, and a self-service section which projects 2½ ft. from the base of the former and is the same length.

The closed-in section is devoted exclusively to displaying poultry, seafood, and perishable meats. Dairy products are stocked in the self-service part.

A feature of the service section is that it is divided by a heavy plate-glass strip in the center. In each side are separate galvanized metal drain pans.

This arrangement permits Ernest Wilder, head of the store, to display such delicately-flavored items as dressed chicken on one side and shrimp, oysters, scallops, and other seafood on the other.

"If these two items were not completely separated," Wilder explained, "there would likely be a migration of flavor, since seafood usually strongly affects poultry in the same case."

Incidentally, the self-service section has helped increase sales of meats since customers picking up dairy products are attracted by the meat displays directly in front of them, according to Wilder.

Both sections of the case are refrigerated by a single, ½-hp. condensing unit located outside the building.



Meats, poultry, and seafoods are displayed in the service part of this 8-ft. refrigerated case (above). A self-service section for dairy products projects 2½ ft. in front of the case. Both sections are powered by a ½-hp. condensing unit located on the outside of the building (below).



2 Remodeled McCrory Stores Cooled by UsAirco Equipment

MINNEAPOLIS—Sale of "Refrigerated Kooler-aire" equipment to McCrory Stores Corp., for use in the national chain's stores in Bristol, Tenn. and Galveston, Tex., has been reported by the United States Air Conditioning Corp. here.

A UsAirco packaged RKW-25, used with cooling tower, will cool the basement of McCrory's Bristol outlet, which is being practically completely rebuilt. Adams Engineering Co., New York contractor, is installing the 25-ton unit.

The second floor of the Galveston store, which is undergoing major alterations, will be air conditioned by an RKW-30, also used with a cooling tower.

William M. Simpson, McCrory's supervising architect, and Charles B. Barrows, supervising mechanical engineer for the chain, directed the design of the two systems.

Commercial Distributors' Ad Expenditures Compared To 6 Other Groups

PHILADELPHIA—Commercial refrigerator distributors who are members of National Commercial Refrigerator Sales Association spent on advertising an average of 1.55% of sales during 1949, headquarters of the group announces.

How this compares with other industries was recently revealed in a survey made by NCRSA of six other industries, including such diversified fields as plumbing and heating wholesalers, machine tool distributors, hardware wholesalers, aviation distributors, wholesalers of welding supplies, and wholesale distributors of industrial supplies.

NCRSA's average of 1.55% was the second highest in the group, coming behind aviation distributors who averaged 1.69%. The refrigerator firms' high of 5.5% was far ahead of any other group, and the low of .36% was greater than the others.

Plumbing and heating wholesalers averaged .54% spent for advertising with a high of 1.5% and a low of .02%. Aviation distributors averaged 1.69%, high of 2.31% and low of .34%.

Hardware wholesalers had an average of .37%, high 1.9%, low .02%; machine tool distributors average .32%, high 2.09%, low .01%; wholesale distributors of welding supplies average 1.28%, high 3.41%, low .18%; wholesale distributors of industrial supplies average .34%, high .97%, low .02%.

Holbrook Refrigeration Moves

LOS ANGELES—Holbrook Refrigeration, Inc., has announced that it has moved to a new location at 145 S. Vermont Ave., Los Angeles 4.

This Is Why There's an Aluminum Shortage

PITTSBURGH—If you are wondering why the government has cut back the use of aluminum for civilian goods, take a look at a few of the many military uses for this metal:

A 3.5-in rocket-launching super bazooka; rockets and other rocket launching equipment; G.I. helmets; aircraft landing mats; tactical and floating bridges; towers for creating the national radar screen; radar equipment; walkie-talkies; fire control towers; portable shelters; mess kits; construction equipment, such as bulldozers; "invasion pipe" for fuel lines; piping and shipping containers for handling rocket fuel chemicals.

PT boats, submarines, amphibious vehicles, and all kinds of ships; unloading ramps and related assault equipment; water and fuel tanks; foil for radar reflection and for packaging food and metal parts; field kitchen equipment; firearms; engine parts for tanks, trucks, and other vehicles; medical field chests; and numerous other applications.

Washington RCA Elects Don Kennedy President

VANCOUVER, B. C., Can. — Don Kennedy, president of Electromatic Refrigeration Co., Seattle, Wash., was elected president of the Refrigeration Contractors Association of Washington here recently.

Other new officers are Ernie Darnell, Electric Refrigeration Co., Seattle, vice president, and Joe Parutto, Modern Refrigeration Co., secretary-treasurer.

Elected directors were Sherman W. Bushnell, C. L. Spoonhauer, and Vince Haufman, all of Seattle; Tom Sager, Yakima; Evan Manley, Wenatchee; and Fred Cheatham, Olympia.

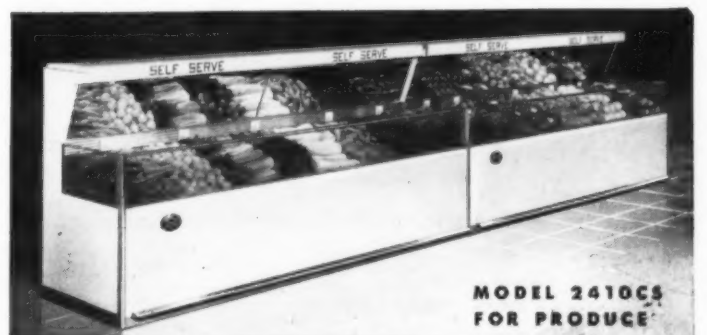


"half-a-horse"
is
winning
the
sales purses

ONLY SHERER GIVES YOU THESE SELLING ADVANTAGES

- SAVING** on initial cost
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Rush complete information on Sherer Franchises

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Why is it that a Sherer case requires only half-horse condensing units instead of the usual ¾, 1 or even 1½ hp units? — simply because of the following, NEW, cost cutting, power saving developments by Sherer research engineers:

ATOMIZED AIR . . . triple-screened air flow provides maximum circulation of conditioned air for merchandise in the "King-size" display wells and eliminates dehydrating "blast."

RE-CIRCULATED AIR . . . provides for re-use of chilled air, rather than for drawing-in a continuous fresh supply of warm air.

DIRECTIONAL FLOW . . . air-ducts, baffles and air atomizing screen, control and direct the air flow where it is wanted — over and around the merchandise on display. Sherer cases refrigerate the merchandise, not the outside air.

YOU'LL SELL MORE, BECAUSE YOU OFFER MORE WITH



SHERER-GILLETT COMPANY, DEPT. AC, MARSHALL, MICHIGAN

The Name:

AIRO SUPPLY COMPANY

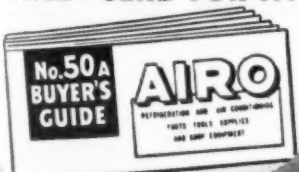
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Chicago 14, Ill.

The Products:

**REFRIGERATION and
AIR CONDITIONING
UNITS — PARTS —
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The Catalog:

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The Service:

Fast, world-wide, low-cost deliveries. Large, complete stocks
WHOLESALE ONLY
Ask for catalog on your letterhead

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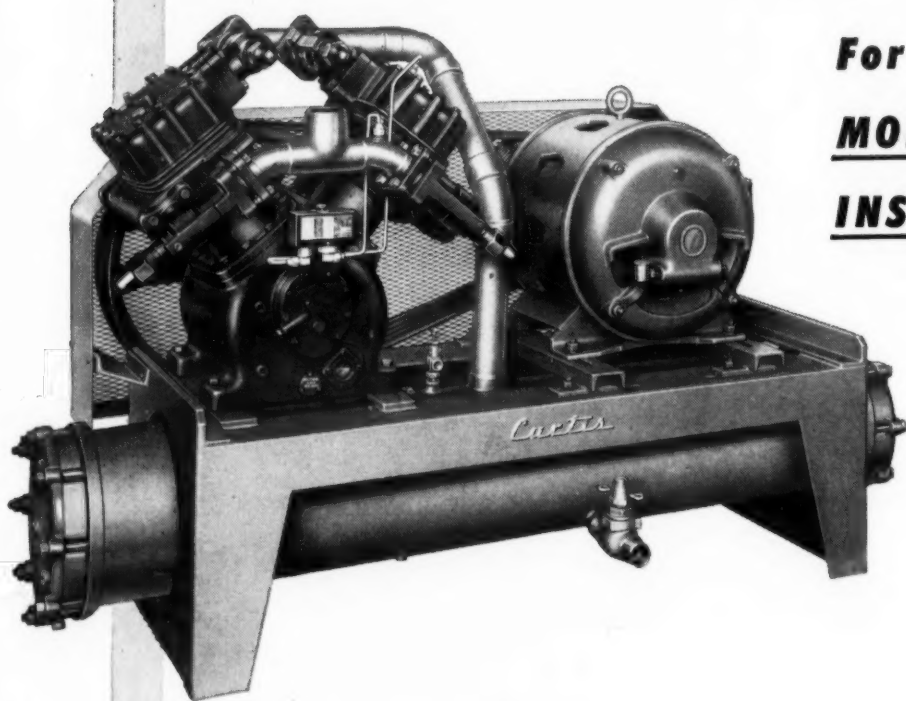
They'll Do It Every Time By Jimmy Hatlo



Do You Have 'Both Feet On The Ground'?

NOW A 40 H.P. CURTIS

WATER-COOLED CONDENSING UNIT



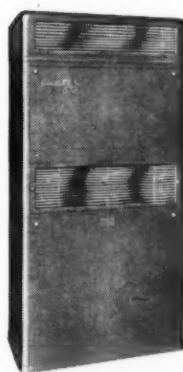
For **LARGER,**
MORE PROFITABLE
INSTALLATIONS

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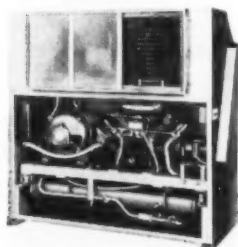
- TIMKEN BEARINGS — LESS FRICTION — Easier adjustment.
 - PRESSURE LUBRICATION — With low-pressure safety cut-out.
 - SLOW-OPERATING SPEED — Economical — More capacity — Long Life.
 - UNLOADED STARTING — 3-step capacity reduction
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With the broad Curtis line, you can handle all of the more profitable air conditioning and refrigeration installations. A limited number of franchises are open. Write giving full details.

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VOLUME 62, No. 13, SERIAL No. 1,149, MARCH 26, 1951

"I have always felt that whatever the Divine Providence permitted to occur I was not too proud to report. The people are not served by pussyfooting, or by that sort of journalism in which nobody will ask who is the editor of a paper or the writer of an article, and nobody will care."—Charles A. Dana.

The Profit Problem In Air Conditioning

PROFITS ARE to be made in air conditioning, but more and more contractors are beginning to wonder how it can be done, or so we're informed.

Someone once remarked:

"The automobile industry was built on the customers; the radio industry was built on the stockholders, and the air conditioning industry is being built on the distributors."

There are a number of distributors and contractors as well as former distributors who won't hesitate to agree.

All this may seem strange in the face of tremendous gains made in the production and sale of package-type air conditioners. Every year, since the war almost, quotas and sales have jumped to set new records.

And yet more and more firms at the sales level say they're having trouble making a profit on the larger package units—the so-called store type air conditioners. There's little complaint about window units. An aggressive merchandising organization finds these profitable in nearly all cases. But the 3's, 5's, and 7½'s seem to present a problem.

No one singles out the manufacturer as the cause of the trouble, yet manufacturers may be able to help.

Here's the sort of thing that goes on:

A small contractor sees an opportunity to sell an air conditioner. Not being too good a salesman or merchandiser, he sells it almost on price alone. He pays the distributor \$1,150 for it, say, trucks it out, installs it, and collects a total of \$1,200, figuring he's made a profit of \$50.

Well, that \$50 may be gross profit, but his net will be something else again. Some smaller contractors don't realize the difference between "gross" and "net" profit.

There are others who do, however, and they contend that larger distributors and contractors often aren't much better off. In fact, some large contractors say their margin on these units is much too slim today. Part of the difficulty may lie in the competition from the small firm who sells no more than six units a year. But an accusing finger is pointed also at the large firm which sells just above cost.

This keeps units moving by the carload, perhaps in an effort to meet the quota and keep the franchise. It may be simply that this type of outlet is shooting for quantity sales at a smaller profit on each.

The whole question, however, is pooh-poohed by still other distributors.

"If you have an alert, aggressive, merchandising-minded sales force, you won't have to sell on price alone. We're making a good margin on all sales of packaged units," says one.

Regardless, the problem seems important enough to many firms to warrant more thorough study and investigation.

One suggestion that may be worth serious consideration is that manufacturers advertise suggested retail prices on a national basis for both the consumer and the trade. This would do for the larger package units what's been done for window air conditioners.

True, it wouldn't solve the problem of installation costs and charges, which can and do vary all over the lot, but it might be a profitable peg on which the air conditioning salesman could hang his hat.

DO Symbols Listed by NPA; Numbers Indicate Program, Not Preference

WASHINGTON, D. C. — The National Production Authority has issued the current list of DO (defense order) symbols used at the present time in rating orders for production under the mobilization program.

The DO-rating system is a single-digit band, and NPA regulations require that all DO-rated orders be filled in advance of non-rated orders. Many materials and products needed for the defense program are in short supply, and the purpose of the single-digit and priorities system is to assure

that defense and defense-supporting production has the right of way.

The two-digit code numbers assigned to the various DO ratings are purely for purposes of identifying the program to which the order is related, or the claimant agency, and do not indicate any preference, NPA emphasized. Rated orders are to be accepted in the order in which they are received.

The code numbers assigned to the various programs, subject to change from time to time, are as follows:

DO Code Numbers, Agency, and Related Program

DO Code	Agency Programs	Major Program Involved
01	Department of Defense	Aircraft
02	"	Guided Missiles
03	"	Ships
04	"	Tanks-Automotive
05	"	Weapons
06	"	Ammunition
07	"	Electronics and Communications Equipment
08	"	Fuels and Lubricants
09	"	Clothing and Equipage
10	"	Transportation Equipment
11	"	Building Supplies and Equipment For Overseas Construction
12	"	Subsistence
19	"	Production Equipment
21	"	Miscellaneous
22	"	Contract Construction
35	Economic Cooperation Adm.	Foreign Additional Military Production
36	Economic Cooperation Adm.	Foreign non-Military Production
37	Office of International Trade	Foreign Production (other than E.C.A. non-Military)
40	Atomic Energy Commission	Operations
41	"	Construction
42	"	Construction Equipment
43	"	Privately Owned Complete Facilities
44	"	Privately Owned Facilities Additions
45	National Production Authority, Civil Aeronautics, Adm., and National Advisory Committee for Aeronautics	Miscellaneous
46	National Production Authority	Industry Plant Expansion
47	National Production Authority	All Canadian Programs
48	Department of Interior	All Programs
49	Department of State	Voice of America
60	U. S. Coast Guard	Miscellaneous
61	"	Aircraft
62	"	Construction
63	"	Ships
97	National Production Authority (or delegatee)	Maintenance, Repair and Operating Supplies
98	National Production Authority (or delegatee)	Production Equipment for Certain Private Contractors
99	National Production Authority (or delegatee)	Basketing (Small orders bunched together under NPA Reg. 2)

(Digits 50 and 51 were formerly used by the National Advisory Committee for aeronautics. Digits 55, 56, and 57 were formerly used by National Production Authority for Canada.)

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Ride the MITCHELL selling wave in 1951, with these exclusive advantages. Get set right now for profits—write today for complete details on the money-making MITCHELL dealership.

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Makers of the World's Finest Room Air Conditioners



MITCHELL is better than ever in '51!
get your share of this big volume business

WRITE FOR THE PROFIT FACTS

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Send me all the facts and quote me dealer prices at once on MITCHELL Room Air Conditioners

Dealer's Name _____

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City _____ State _____

By _____

ASME To Meet April 2; Papers on Cooling Tower, Heat Pump To Be Feature

ATLANTA — Seven technical papers on cooling towers and one on the heat pump are among those to be presented at the four-day spring meeting of the American Society of Mechanical Engineers to be held at the Atlanta Biltmore April 2-5.

"The Steam-Generating Station as a Source and Sink for the Heat Pump" will be discussed at a morning session on April 4 by James A. Eibling and Bertrand A. Landry of Battelle Memorial Institute.

Sponsored by the Power Division of ASME, the cooling tower papers will be presented at a symposium to be held the morning and afternoon of the opening day as follows:

"Economic Factors in the Design of Cooling Towers," A. R. LeBailly, Sargent & Lundy.

"Comments on Cooling Tower Economics," Louis Elliott, Ebasco Services, Inc.

"Selection, Operation, and Maintenance of Industrial Cooling Equipment (Cooling Towers and Air-Cooled Exchangers)," Howard E. Degler, the Marley Co., Inc.

"Recirculation in Cooling Towers," Joseph Lichtenstein, Foster Wheeler Corp.

"Operating Experiences with Cooling Towers in the Central Gulf Area," H. B. Hiebeler, Houston Lighting & Power Co.

"Deterioration of Wood in Cooling Towers," R. H. Baechler and C. A. Richards of Forest Products Laboratory.

No Need for Rationing Now

Petroleum Products Available In Sufficient Quantity If Supply, Demand Are Anticipated

CHICAGO — There is no need of rationing petroleum products now, according to D. S. Warning, assistant general manager of the distribution economics department of Standard Oil Co. (Indiana).

Speaking at the March 12 meeting of the Illinois Chapter, American Society of Heating and Ventilating Engineers, he said there is sufficient yield flexibility to supply the quantities of individual products required provided maximum seasonal inventory accumulations take place.

Stating that crude runs are adjusted, insofar as possible, to bring supplies in line with demands, Warning stressed that the simple economics of supply and demand quickly regulates the yields of various products. In his opinion, government management of each product would be too slow and unwieldy.

"We would," he said, "feel more sure of guaranteeing that necessary yield shifts would take place if price controls were not in effect."

Discussing the outlook for petroleum fuels, he estimated an increase of 10% in crude runs for this year as compared to last year. His forecast of demand for major products showed distillates up 10%, residual fuels up 4.3%, gasoline up 10.6%, kerosene up 9.2%, and all other products up 8.2%.

At the same meeting, M. B. Nugent, Sahara Coal Co., Chicago, described the coal industry as being

made up of approximately 5,000 companies operating 9,000 mines in 28 states. He said that it is a highly competitive industry now producing 500,000,000 tons per year and that it could produce 700,000,000 tons.

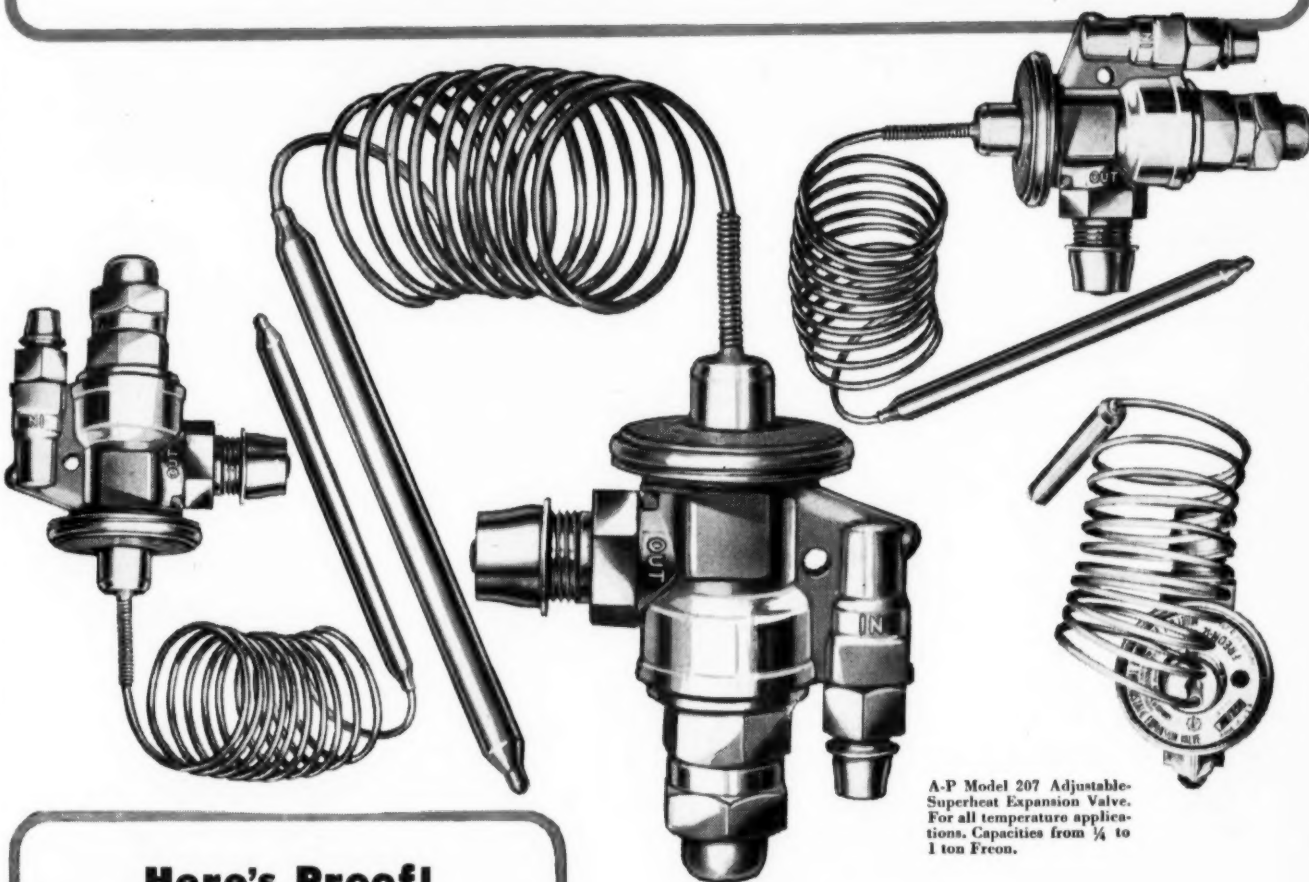
After reviewing the industry's accomplishments last year when more coal per man-day was produced than ever before and the best accident prevention mark of all time was recorded, Nugent said the industry is now in better shape than at any previous time, that it can fill the gaps if other fuels become in short supply, and that it does not require retooling for war work.

Limitation orders applying to the use of gas for space heating in the Chicago area were described by D. E. Collins, Peoples Gas Light & Coke Co.

There are now over 90,000 applications for gas heat on file, and a new pipe line from the Gulf Coast area of Texas now under construction will permit some 20,000 heating jobs to be put on the company's lines in June, he said. Later on, he stated, more compressors will be used and another 20,000 applications may be filled next year.

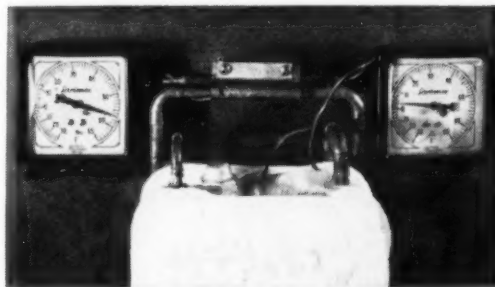
Three other methods of obtaining more gas are now being studied, Collins reported. They include gas storage in an underground sandstone strata near Kankakee, Ill., storage in depleted oil wells, and the liquefaction of gas.

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Here's Proof!



Here is dramatic proof of the efficiency of A-P Liquid-Charge. In the unit pictured above, there is a 54 degree difference between valve and bulb, and the valve is mounted upside down! Despite these conditions the bulb provides perfect control. Unusual? Yes; but typical of the efficiency and dependability you can expect from A-P Liquid-Charged Valves!

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Install it right-side up—upside down—sidewise—in any position required by the application, even lower than the bulb. Install it in any ambient temperature, either warmer or colder than the bulb—it's all the same to the A-P Liquid-Charged Valve; you'll still get POSITIVE, accurate control!

More than that, you don't need a special-purpose valve for low temperature—another for commercial temperatures—and still another for air conditioning. Instead, ONE A-P Liquid-Charged Valve can be used for all purposes. Write for Bulletin R-5 describing A-P Liquid-Charged Valves—today!



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Good Piping Layout Essential for Success of Refrigeration Installation, Goddard Tells Detroit ASRE

Methods of Sizing Lines for (1) Proper Refrigerant Flow, (2) Oil Return Suggested

DETROIT — Sizing and arrangement of lines are as important to the success of a refrigeration system as the proper selection of equipment, declared M. B. Goddard, Chicago district engineer for Carrier Corp., who discussed "Refrigerant Piping" before the Detroit section, American Society of Refrigerating Engineers.

And because "the design of this piping system is usually the duty of the installing contractor rather than the manufacturer," the contractor's responsibility is a most important one, the speaker implied.

As for the functions of a refrigerant piping system, "the most obvious one is to provide a path for the flow of refrigerant between the various pieces of equipment," he explained. "However, another function, equally important but often overlooked, is to provide a path for the flow of oil. This is especially important with 'Freon' and methyl chloride because the percentage of oil circulating in the system may sometimes be quite high.

"The flow of refrigerant through the piping is caused by pressure differences established between the various portions. In the ordinary compression type of system this pressure difference is created by the compressor and is modified by the expansion valve, other control valves if

used, and by gravity and friction," Goddard said.

Friction, which uses up a considerable portion of the energy driving a refrigerant plant, is taken into account in the rating of compressors, compressor valves, manifolds, and evaporators, but it is the installing contractor who must allow for the friction in the piping system, he explained.

"Friction in pipes may be designated in various ways. One common method is to evaluate it in lbs. per sq. in. per unit of length, usually 100 ft. Thus a friction of 2 lbs. per 100 ft. would mean that to cause a given quantity of refrigerant to flow through a pipe 100 ft. long, a pressure difference of 2 lbs. per sq. in. would be required.

"The refrigeration engineer is likely to find these units a little awkward to use. He is interested mainly in producing certain temperatures and in the removal of a certain quantity of B.t.u. of heat. A more convenient measure of pipe friction," Goddard declared, "is to translate the pressures involved directly into the corresponding saturation temperatures of the refrigerant so that the friction will be expressed in 'F'."

He explained further that under given conditions of operation the quantity of 'Freon' flowing in the pipe

will do a definite amount of work, so that this quantity could be expressed in tons of refrigeration.

As an illustration he cited a 100-ft. long "Freon-12" suction line handling 1 ton of refrigeration with a pressure drop of 2° F. If the pressure at the inlet were 19.7 p.s.i., this would correspond to a saturation temperature of 18° F. With a suction line loss of 2° F., the saturation temperature at the outlet is 16° F. and the corresponding pressure is 18.38, or a pressure drop of 1.32 p.s.i.

If the inlet saturation temperature were 44° F. and the outlet 42° F., the pressure drop would be 1.89 p.s.i. instead of the 1.32 p.s.i. as in the other example.

CONSIDER RANGE OF OPERATION

"To size a suction line for a given temperature drop, therefore, it is apparent that the range of operation must be considered," Goddard emphasized. "In general, for lower ranges, the pressure drop in pounds must be less for a given temperature drop."

Lower operating temperatures also require circulation of more "Freon" per ton of refrigeration, he added. At 44° F. evaporator temperature the amount of this refrigerant required would be about 3.85 lbs. per minute per ton. At 18° F. evaporator temperature, however, 4.08 lbs. per minute per ton would be required.

Since more refrigerant must be handled at the lower temperatures, it means that suction lines must be larger than would be required for the same tonnage system at higher temperatures if the same performance is to be obtained, he pointed out.

"The hot gas line also has some pressure drop, and if it is very long as may be the case when an evaporative condenser is used, the pressure drop may also have quite an effect on the capacity," Goddard said.

GREATER RUNNING TIME RESULT OF PRESSURE DROP

Increased pressure drops in both the suction and hot gas lines will also result in greater running time and more electrical consumption to produce the same amount of refrigeration than if the pressure drops were held to a minimum.

Pressure drop in the liquid line, however, has little direct effect on over-all system capacity, excepting where pressure drop is great enough to cause flash gas to form, he indicated. Flashing of the gas in the liquid line ahead of the expansion valve can reduce the amount of refrigerant going through the valve and thus cut the amount of refrigerating capacity.

Liquid line pressure drop to the point where flash gas forms can also result if long vertical risers are employed, but gravity has relatively little effect on pressures in suction and hot gas lines, so it can gener-

ally be ignored, according to Goddard.

"The procedure in calculating the pressure drop for a given refrigerating plant is more or less as follows:

"A drawing or sketch should be made which will show the actual length of pipe and the number and type of fittings. A list or chart should then be prepared listing the fittings, then the equivalent feet of straight pipe, and listing also the actual feet of straight pipe.

"The actual and equivalent feet of straight pipe are then added together giving the total equivalent length of the line. If the size of the line has been determined, the pressure drop can be determined by reference to a chart. If the size has not been determined, then a suitable pressure drop should be selected and the line size for this drop can be selected from the chart."

Charts are available, he indicated, to show pressure drops in straight lines, valves, and fittings for various sizes and types of lines and refrigerants.

RETURNING OIL TO COMPRESSOR

As for the other major function of refrigerant piping—returning the oil to the compressor—Goddard explained that "in the liquid line oil is dissolved in the 'Freon' and travels along with the liquid. In the hot gas line the oil is generally a fine mist or fog, and the hot gas will carry it into the condenser.

"In the suction line, however, the oil is in liquid form. It will be blown along readily through a horizontal line and will, of course, be assisted by gravity in flowing downward through a vertical line. However, in the case of a riser in which the flow is upward, we are forced to depend on entrainment of the oil by the suction gas to lift it up through the riser.

"Unless the gas velocity is high enough, the oil will separate out and fall to the bottom of the riser where it will remain trapped. The velocity necessary for entrainment depends on the density of the gas, which varies with the suction pressure, and also depends upon the diameter of the pipe."

Tables have been worked out which give the minimum velocities for oil entrainment in the refrigerant over a broad range of pipe sizes and operating suction pressures, but Goddard pointed out that allowance must be made for variations in velocity if the plant is of the variable capacity type.

GAS IN RISER MAY HAVE VARIABLE VELOCITY

When variable capacity compressors are employed, or multiple compressor hookups that vary with the load, it will frequently happen that gas in riser will have a variable velocity. This will require the upward flow risers to be sized to ensure oil entrainment at the minimum velocity.

However, this means that a line providing sufficient velocity at low capacity operation may result in increased velocity and excessive fric-

(Continued on next page)

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Available in 16 standard sizes, in capacities from 1/2 to 180 tons, ACME Heat Exchangers increase compressor capacity, prevent flash gas in liquid line, eliminate expansion valve vibration or chattering and offer true counter-flow operation. Model H has shell and coil construction. Also available in "U tube" bundle construction. ACME Heat Exchangers offer a practical solution when compressor capacity is on the border line for load requirements.

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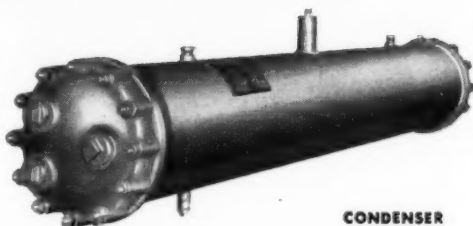
Are offered in a complete range of sizes, are economical and efficient to operate, easy to install and offer positive oil separation. Offered in a complete range of sizes, they are scientifically engineered for use with Ammonia or Freon. Series F Units have a central mounting strap and may be mounted directly on the Compressor base. Series FK and AK Models have a support bracket welded to the top.

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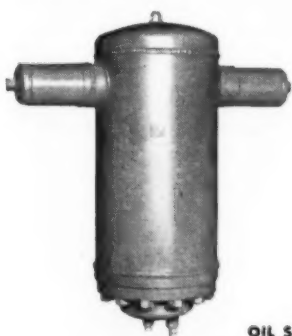
Acme



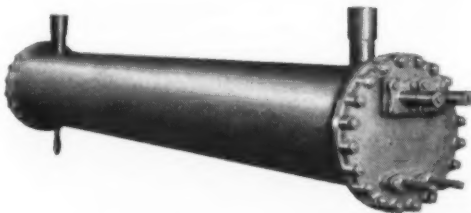
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Good Piping Layout Essential--

(Concluded from preceding page)
tion when the system operates at full capacity.

"For example," explained Goddard, "suppose we have a job having a full load capacity of about 45 tons at 40° F. suction, and with capacity variation to reduce the capacity to about 15 tons minimum. To return oil we cannot use larger than a 3½-in. line and with that the pressure drop will be about 0.2° F. per 100 ft. The full load capacity will be 300% of the minimum, and the corresponding pressure drop will be seven times the 0.2° F. minimum or 1.4° F. per 100 ft.

DOUBLE RISER SYSTEM

"If, however, the minimum capacity of this plant were about 10 tons, the riser would have to be reduced to 2½ in. and the pressure drop at maximum load would be nearly 18 times 0.2° F. or 3.6° F. per 100 ft. To offset this friction, horizontal lines or vertical drops could be increased in size to keep the total drop within desired limits. If this is not possible, the friction drop at maximum load can be reduced by a double riser system."

The double riser (see Fig. 1) is used in the suction line of such a system. One riser is small, being sized to give suitable velocity when the system is operating at minimum capacity. Beyond the smaller riser the suction line loops downward to form a trap and then rises to connect into the suction main as does the smaller riser. The combined size of the smaller and larger risers gives the proper velocity when the system is operating at full capacity.

What happens when the system operates at minimum capacity is this: Oil is trapped out of the suction gas to fill the trap at the bottom of the large riser. This seals it off, and the suction gas will flow through the small riser.

When the system returns to full capacity, the velocity will be too great for the small riser, so it will blow the oil out of the trap and start the gas flowing through both risers. The oil will be entrained and carried back to the compressor.

"Wouldn't there be a slug when the oil is blown out of the trap?" Goddard was asked.

"No," he explained, "the oil doesn't come back in one slug. It spreads

itself through the lines. Usually the double riser and trap are some distance from the condensing unit."

"Is the size of the trap critical?" he was also asked.

"No, but we try to keep it as small as possible."

Goddard also suggested that in connecting the suction risers to the suction main, the risers should go in at the top (see Fig. 2) unless the main is larger than the risers. If the main is larger, the risers can connect into the side. In either case, the purpose is to prevent oil flowing back down the risers.

In this connection he noted also that where multiple evaporators are employed on systems which do not require a double riser and the compressor is located below the evaporators, the suction line should be looped upward (see Fig. 3) to about the level of the top of the evaporator before returning to the compressor. This loop would prevent any liquid refrigerant from draining to the compressor.

Cross-connecting of compressors to obtain variable capacity brings with it several piping problems, too, Goddard said. He suggested, for example, that the hot gas header be run near the floor where two or more units are cross-connected.

"If one of the compressors is idle, a portion of the hot gas line may act as a condenser, as the condensing temperature is usually higher than the room temperature. If the hot gas header were above the compressors, this condensed liquid would be trapped in the line and could cause bad slugging and ruptured lines when the idle compressor starts."

Interconnected compressors having individual water-cooled condensers must have the hot gas discharge lines interconnected to maintain uniform pressure even though only some of the machines are operating. Without this arrangement, the pressure in the condenser of the idle machine would drop below that of the condenser in the other machines and would fill up with liquid. This would probably take too much refrigerant out of the system and cause loss of liquid seal in the liquid line.

BEWARE OF INDIVIDUAL AUTOMATIC VALVES

An equal supply of water must be maintained to each water-cooled con-

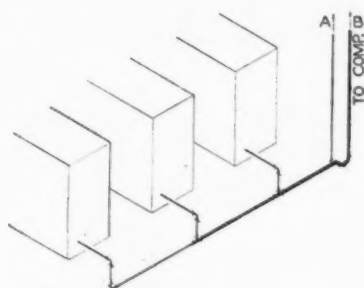


FIGURE 1: Double riser used in suction line to give proper velocity in system operating at variable capacity.

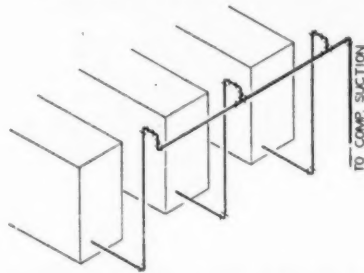


FIGURE 2: Suction risers connected at top of suction main.

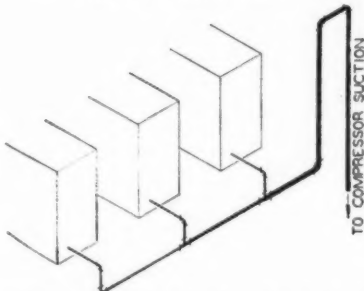


FIGURE 3: Suction line looped to level of top of evaporator to prevent liquid refrigerant from draining to compressor.

denser on a multiple hookup, and Goddard advised that "if an automatic regulating valve is used, it should be placed in the common supply line. Individual automatic valves on each condenser should not be used because it is too difficult to make them all feed uniformly at different loads."

The importance of oil and gas equalizing lines to maintain even oil levels in all multiple machines was also stressed by Goddard.

"Don't connect the oil equalizing line at the bottom of the compressor crankcase; put it at the desired operating oil level," he advised.

USE OF MUFFLERS

Questioned as to whether sizing of the hot gas line would have any effect on resonance, Goddard admitted that "resonance is very apt to occur in hot gas lines. It can be calculated but I wouldn't know how to do it myself. It usually occurs with a remote condenser. I'd recommend the use of mufflers in field-made connections. It's not so apt to occur in the suction line, but if it does you may need mufflers here."

"What effect do heat exchangers have in sizing of lines?"

"Heat exchangers may cause a pronounced pressure drop on the suction side," Goddard replied to this question. "If you can't get authentic ratings I'd assume a 30-ft. equivalent straight length for a heat exchanger suction line."

"Do condensing unit ratings take into account the service valve on the compressor?"

"Yes."

"Is there much difference between line sizing for 'Freon-12' and for 'Freon-22'?"

"Not too much," Goddard said.

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ASRE Issues Revised Edition of Data Book; 5 New Chapters Added

NEW YORK CITY—The second revision of the Refrigerating Data Book, Applications Volume, first published in 1940 and revised in 1946, has just been issued as the 1950 edition by the American Society of Refrigerating Engineers.

All chapters have been reviewed, revised, and brought up to date by 81 authors, all recognized experts in their different fields.

Several chapters have been completely rewritten to conform with the latest practice in refrigeration applications.

In addition, the volume has been expanded to include five new chapters on subjects which have become of vital concern to the industry since 1946. These new chapters are: Packaging of Frozen Foods, Frozen Fruit Juice Concentrates, Storage of Dehydrated Fruits and Vegetables, Refrigeration of Fruits on Railroad Diners, and Metals for Use at Low Temperatures.

Particularly significant is the chapter on frozen juice concentrates which describes authoritatively for the first time the various methods of obtaining fruit juice concentrates, the equipment required, and the operating procedures.

Extensive bibliographies are found throughout the book, providing sources of additional information for those interested in delving further into particular subjects. For locating subject matter in the book more easily, the index has been enlarged

to include more headings, subheadings, and cross references, according to ASRE.

Compiled under the direction of Editor-in-Chief Dan C. McCoy of Frigidaire and eight associate editors, the eight major sections of the 3rd edition are: Frozen Foods, Cold Storage Practice, Refrigeration in Food Manufacture, Refrigerated Food Distribution, Low Temperature Applications, Industrial Applications, Comfort Air Conditioning, and Industrial Air Conditioning.

C. R. Neeson of Airtemp Becomes ASRE Fellow

CINCINNATI—Charles R. Neeson, refrigerating consultant for Airtemp Division of Chrysler Corp., was honored by the Cincinnati section of the American Society of Refrigerating Engineers recently at a dinner meeting here.

Paul B. Christensen of New York, president of the society, conferred the grade of Fellow of the Society on Neeson, in recognition of his many accomplishments in the refrigeration and air conditioning industry. Neeson is the forty-first, out of a membership of more than 5,000, to receive this honor.

Neeson has been associated with the industry since 1910. He was chief engineer for Airtemp until 1938 when he was appointed refrigerating consultant.

Although he has worked in many branches of the industry, he is best known for designing and developing the compact high-speed compressor in general use today, including the Airtemp radial compressor.

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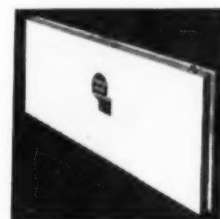


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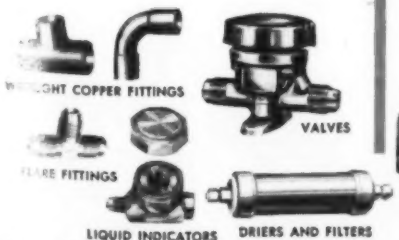


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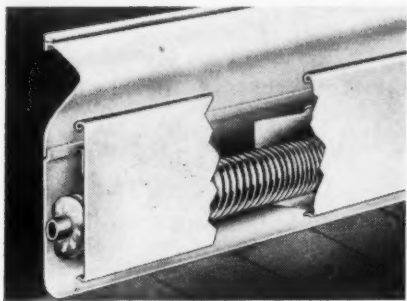
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What's New

When requesting further information on new products, please use "Information Center" form.

Baseboard Heating Panel Not Too Warm for Children



KEY NO. A-340

JOHNSTOWN, Pa.—National Art Baseboard, for installation at the junction of floor and wall as the heat distribution component of a forced hot water heating system, is now being marketed by The National Radiator Co. here.

The heating element of the new baseboard unit is made of 3/4-in. commercial copper tubing on which is bonded a series of helical copper fins.

The steel enclosure is provided in the form of a back panel assembly and a front panel assembly. Heating elements, back and front panel assemblies in 8-ft. lengths are each packaged six pieces to a carton.

The manufacturer states this allows the placing of the back panel

and heating element along the wall surface without opening front panel cartons until needed for job completion.

The hot water ratings for the new product range from 370 B.t.u. per hour, per lineal foot at a water temperature averaging 170° F., up to 730 B.t.u. per hour, per lineal foot with a water temperature averaging 230° F.

National Radiator states that the new baseboard heating unit is designed so the front panel will not become too hot for even children in a home to touch while they are playing.

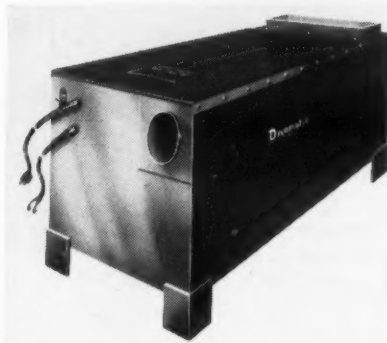
When the National Art Baseboard is installed semi-recessed along the outer walls of residence, store, or office, it extends only 1 1/2 in. into the room from a plaster, wood, brick, or building board wall.

The manufacturer does not recommend the new product being installed in a gravity hot water system when Art Baseboard installed lengths exceed 8 ft.

It can, however, be economically installed to replace standing radiation, as well as in an entirely new heating system, according to the company.

All connections to National Art Baseboard are 3/4 in.

Dryomatic Dehumidifier Suited to Many Applications



KEY NO. A-341

ALEXANDRIA, Va.—Manufacture of a new adsorption-type package unit for year-round humidity control and protection against rust, mold, mildew, and corrosion in industrial applications has been announced by Dryomatic Corp., here.

Anthony Hass, Dryomatic general manager, cites application of the unit to a large cross-section of industry, including candy; food processing; seed storage; warehousing; fur and cloth storage; electrical, wood, metal, and plastics products; machine parts; vaults; electronic and telephone installations; laboratories; photographic, paper, and printing supplies; and dozens of others where moisture control is an important preservative factor.

The model 100 unit is a three-channel continuous adsorption dehu-

midifier with plug-in automatic operation, with "no buckets to empty or chemicals to replace." It is reportedly effective singly in enclosed areas up to 25,000 cu. ft. In larger areas, a number of the units can be installed.

The unit is said to give precise humidity control in a wide range of temperatures—from -40° F. to 100° F., "making it ideal for maintaining low humidity levels in cold storage plants and unheated warehouses for year-round 'dry-cold' protection." Humidity levels as low as 15% can be maintained, according to Dryomatic.

Measuring 45 in. long, 19 in. high, and 16 in. wide, the model 100 is compact and can be used either inside or outside the area to be protected, thus saving valuable floor space for other uses where desired, the company pointed out.

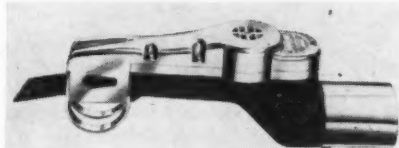
The model is a 110-volt, 60-cycle, single-phase unit, with a maximum power consumption of 1.2 kilowatts. Shipping weight is 210 lbs.

Other units in the Dryomatic line of dry conditioners include the Model 20, with effective control area of 7,000 cu. ft., and Model 25, controlling humidity in areas up to 10,000 cu. ft. of enclosed space.

Price range is \$154.50 for the Model 20; \$278 for Model 25; and \$594 for Model 100.

Dryomatic also engineers dehumidification units to meet special requirements.

RCS Reciprocating Saw Needs No Starting Hole



KEY NO. A-343

JOLIET, Ill.—No starting hole in "key-hole" or other on-the-job sawing is needed when using the new RCS "roughing-in" reciprocating saw, states its maker, RCS Tool Sales Corp. here.

Held tightly against the material to be cut, with the guide used as a fulcrum, the tool is simply "rocked" into an upright position and then guided along the cutting line.

A built-in blower keeps the saw comfortably cool, and by directing the air flow towards the blade, keeps the cutting line from being obscured by chips or saw dust.

An assortment of special blades permits cutting almost all types of material and the 3/4-in. stroke allows the tool to be used in places too cramped for a normal saw stroke.

Imbedded nails are cut quickly and without damage to the blade so that such operations as opening crates and cutting openings in flooring or siding add to its usefulness.

All friction surfaces are of "Oilite," phosphor bronze or high speed ball bearings, and all parts subject to wear are replaceable. Power is provided by any heavy-duty 1/4-in. or 5/16-in. electric drill, by air drill, or by standard flexible shaft equipment.

Although it measures only 10 3/4 in. over-all, and weighs only 3 lbs. 6 ozs., the Super-Saw is designed as a heavy or constant duty power tool and is intended for both field and shop use.



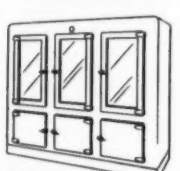
Open Meat and Dairy Cases



Open Vegetable Cases



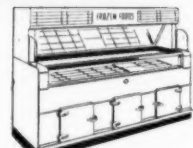
Slide-door Refrigerators



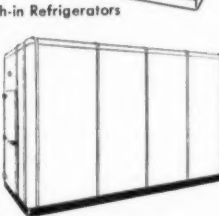
Reach-in Refrigerators



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Food Freezers—Upright



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TYLER
FOR FOOD REFRIGERATION



Model shows Safgard home pasteurizer in operation. Ability to handle small quantities of milk or cream makes the unit especially useful for small families.

Pasteurizer Can Handle 2 Quarts to 2 Gallons

KEY NO. A-342

CHICAGO—From two quarts to two gallons of milk or cream can be pasteurized in the model P-2000 home pasteurizer manufactured by Safgard Division of Grand Sheet Metal Products Co. here.

The holder type machine operates automatically during the pasteurizing cycle. It utilizes agitation during both the heating and cooling periods.

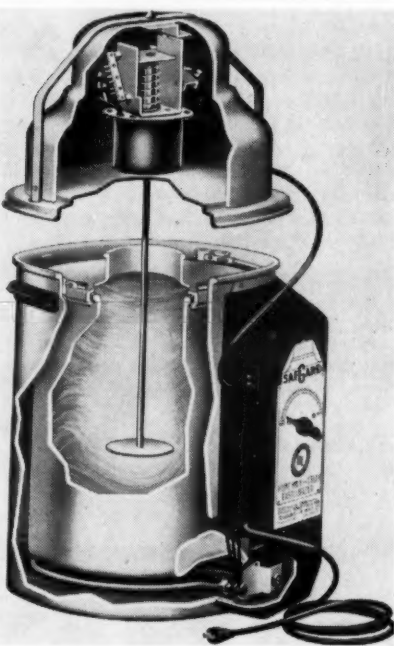
Heat is conveyed from the heating element to milk through an electrically-controlled water jacket. Water is supplied to the outer container through an inlet hose which is attached to a faucet.

Complete immersion of the milk container in the hot water is accomplished by use of a rubber cover ("Safgard Phosphaseal").

This feature of the unit is said to assure a uniform transfer of heat. A bellows-actuated, snap action

type thermostat holds the milk at pasteurizing temperature. Length of pasteurizing time is controlled by an electric timer switch.

The Safgard pasteurizer is powered by a solenoid motor which has only two slow-moving parts, the manufac-



Cutaway view of Safgard model P-2000.

turer pointed out. The nylon motor bearing is said to be sanitary and non-toxic.

Milk container, outer container, and canopy are constructed of lightweight aluminum.

The milk container is specially anodized to make it resistant to stain. The removable dasher is made of stainless steel.

The line cord plugs into any 110-120-volt, 60-cycle a.c. outlet. According to the company, it costs about a penny a gallon to pasteurize with the machine.

Dairy college laboratory tests show, the manufacturer said, that milk pasteurized in the Safgard unit is as pure and safe as that pasteurized in strictly supervised commercial equipment.

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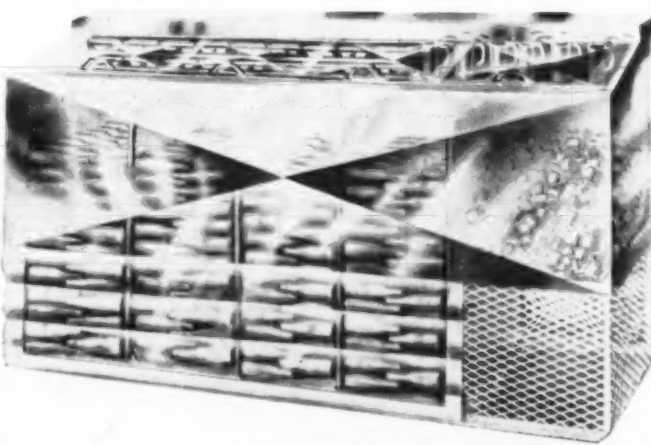
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2 feet long glass chilling shelf.

Cools 480 12 oz. bottles.

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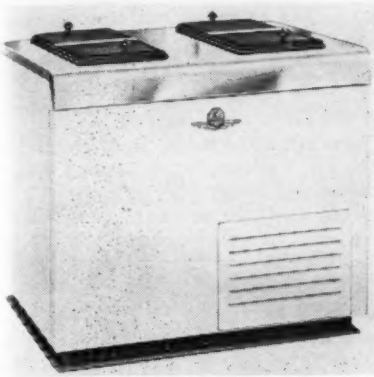
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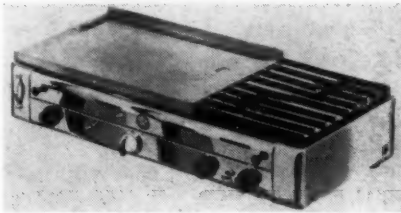
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What's New (Cont.)



**Hot Plate, Griddle Unit
Designed for Narrow Area**



KEY NO. A-345

New Type Installation In Ace Ice Cream Cabinet

KEY NO. A-344

NEW BEDFORD, Mass.—A new 2½-gal., self-contained ice cream storage cabinet has been introduced by Ace Cabinet Corp. here.

The new cabinet is said to incorporate a new principle of insulation that assures consistent low temperature protection under all conditions. According to the manufacturer, special materials of extreme low thermal conductivity are "fused" into the heavy gauge steel shell.

Over-all dimensions of the cabinet are 41 in. long, by 29½ in. wide, by 34½ in. high. Two double hinged lids with center hinges are used on the cabinet. Top is of stainless steel while the body of the cabinet is finished in white.

ST. LOUIS—A combination gas griddle and gas hot plate designed and built for the narrow backbar or working counter has been introduced by the Star Mfg. Co., division of Hercules Steel Products Corp. Depth of the unit is only 17½ in. Length is 37 in. and height 7 in. About 280 sq. in. of cooking area is provided.

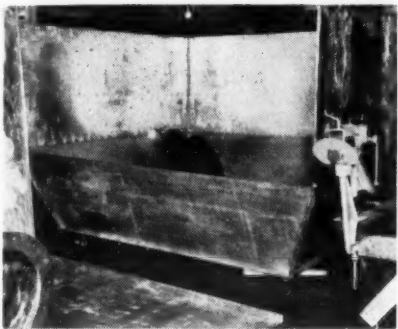
The heavy griddle casting practically eliminates temperature fluctuation, the manufacturer said. Positive action holds griddle temperatures at the desired heat. Robertshaw thermostats provide accurate, adjustable control.

Preheat time for the unit, which is called the model 83, is 12 minutes to reach 450° F. Gas consumption is said to be 45,000 B.t.u. per hour at the maximum.

List price of the combination unit, including tax, is \$139.50. A pilot light is available as an accessory for \$19.75 extra.

Heliarc Welding Equipment Cuts Grinding Costs

KEY NO. A-346

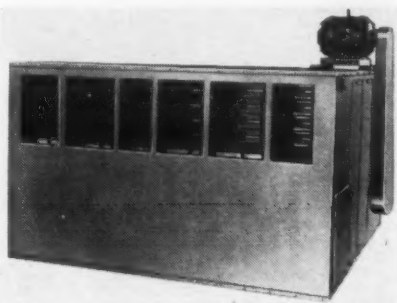


Galvanized steel being welded with Heliarc torch in the fabrication of air conditioning equipment.

NEW YORK CITY—Heliarc welding equipment, that is claimed to reduce costs of grinding by 75%, is being marketed by Linde Air Products Co., a division of Union Carbide and Carbon Corp.

Use of Heliarc welding is said to increase welding speed, reduce loss of zinc, reduce warpage problems, and provide a neat appearance to the finished weld.

Units are made of 14 gauge galvanized steel. For the inside seams, no filler rod is used.



**Multi-Zone Conditioners
Introduced by Marlo Coil**

KEY NO. A-347

ST. LOUIS—The complete line of Marlo multi-zone air conditioning units has been designed by the Marlo Coil Co. for those applications where one unit must serve two or more zones.

Identified as Model CMZ, eight different model sizes provide 4.5 to 28.0 sq. ft. of coil face area, with a total air volume range of from 1,500 to 17,000 c.f.m. which can be divided into two to six zones.

With these multi-zone units a wide variety of air conditioning demands can be met in one building simultaneously—all air conditioning functions, ventilation, humidifying, winter heating, filtering, summer cooling, and dehumidifying. Thus individual controls for each zone so supplied make it possible, for example, to heat one zone while cooling another.

Each unit has its own thermostatically-controlled dampers to modulate the flow of warm or cool air. The units can also be furnished with one coil only, to provide cooling or heating functions singly.



**Complete Kitchen In
Ultra-Cold 60-In. Unit**

KEY NO. A-348

LOS ANGELES—Seven units, including a refrigerator and a range, make up a 60-in. "Pan-American" kitchen now being manufactured by Ultra-Cold, Inc. here.

The refrigerator is Ultra-Cold's 4-cu. ft. Pan-American model. Dortch Stove Works, Inc. makes the four-burner Pan-American range.

Other units are two wall cabinets, one measuring 36 in. by 18 in. and the other 24 in. by 30 in.; a 15-in. sink cabinet; a 15-in. sink, including swivel deck type faucets finished in chrome; and a Formica top trimmed with stainless steel.

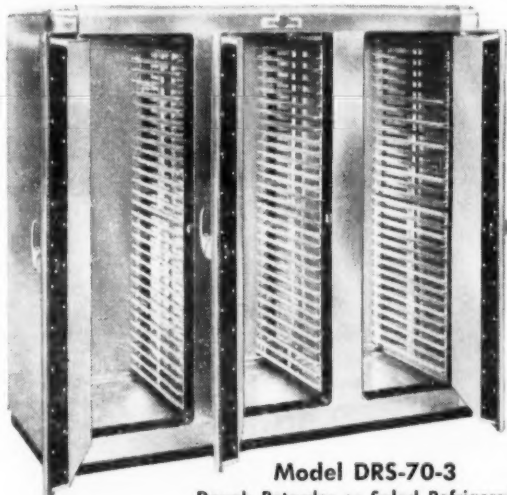
Nat Nigberg Industries, of which Nat Nigberg is president, represents Ultra-Cold. It also represents Dortch Stove Works and other manufacturers.



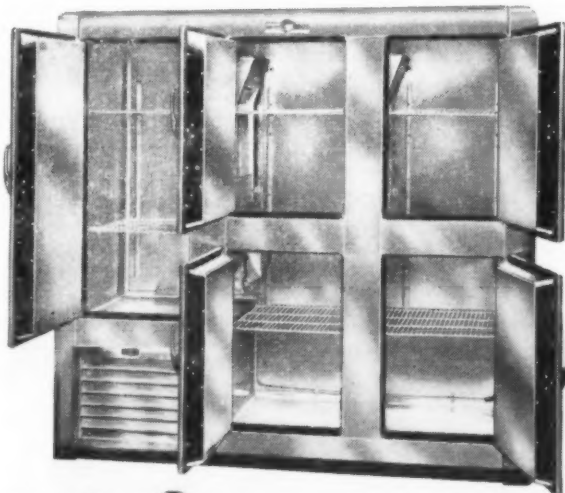
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What's New (Cont.)



Cunningham Vegetable Case Uses Cold Mist

KEY NO. A-349

DETROIT—An open top, fresh vegetable display cabinet with full vision front is currently being produced by Cunningham Products Co.

The self-contained case is equipped with fresh water spray heads that deliver an ice cold fog mist at predetermined intervals.

Ends, back, and bottom of the display area are refrigerated plates as is the central display shelf. Refrigeration is provided by a 1/2-hp. Tecumseh condensing unit.

Construction is of high tensile strength aluminum, finished in white baked enamel.

Variable Pitch Sheaves Handle Seasonal Needs

KEY NO. A-3410

PITTSBURGH—Use of variable pitch sheaves on fans and electric motor shafts for combination direct-fired warm air heating and air conditioning or ventilating systems has proved effective for commercial establishments and industrial plants, report engineers of Dravo Corp.'s heating department.

The idea of variable pitch sheaves in this application is to vary the volume of air handled by the blower for seasonal requirements, either heating, ventilating, or air conditioning. Usually, the blower and motor are located outside of the heater casing because of the extra-large size fan used. However, the principle also can be adapted for use in standard Dravo Counterflo direct-fired heaters under certain conditions.

Such systems, according to Dravo engineers, are highly flexible in their functions. The variable pitch sheaves can be installed for automatic as well as manual control thereby making the systems virtually 100% automatic the year-round.

In one installation for a retail store, an oil-fired Dravo heater with a capacity of 1,500,000 B.t.u.'s per hour was used. The 2-hp. motor and the blower have variable pitch sheaves, each with eight grooves for



Installation of variable pitch sheaves on blower and 20-hp. motor used in a combination warm air heating and air conditioning system. For winter operating cycle, the blower is arranged to supply 17,000 c.f.m. of blended fresh and recirculated air to a Dravo Counterflo heater. In summer, the pitch of the sheaves is adjusted so the blower's capacity is increased to 22,000 c.f.m. of conditioned air.

belts. During the winter, the blower supplies 17,000 cu. ft. of air per minute to the heater. The air is passed over the heater's stainless steel combustion chamber and discharged into the main warm air supply duct.

For summer operation, in conjunction with air conditioning, the pitch of the sheaves is adjusted by lever to increase the blower capacity to 22,000 cu. ft. of cooling coil-conditioned air per minute. For better efficiency, a by-pass duct carries 5,000 cu. ft. of air from the blower directly to the main supply duct while the balance of the air passes through the heater unit.

Another advantage of variable pitch sheaves, it is explained, stems from their wide range of blower speeds which balance static pressures and velocities in the ductwork system.

Motors used in this application are mounted on automatic motion control bases that maintain uniform belt tension throughout the sheave adjustment range. A hand wheel on this base regulates the pitch diameter of the sheave while in motion while simultaneously moving the motor forward or backward to compensate for the change in centers between shafts.



New Lectro-Host electric range features extra large storage capacity.

Lindemann & Hoverson Add New Range to Line

KEY NO. A-3411

MILWAUKEE—The A. J. Lindemann & Hoverson Co. has announced an addition to its line of L & H Lectro-Host automatic electric ranges for 1951.

This new range is a standard model with regular seven-heat switches, Monotube surface units, divided cook-top arrangement, and super "5000" oven. Extra large storage facility is provided in the storage compartment and two lower service drawers.

One of the outstanding features on this model is the Duo-Cook convertible cooker, usually found only on higher priced models. The Duo-Cook can be raised for use as a surface unit when needed or can be used as a conventional deepwell cooker.

Service drawers are equipped with nylon rollers which provide silent and easy operation, even though heavily loaded. Range lamp, interval timer, automatic time control, and electric clock are optional.

SLANTS on Service

"Slants on Service" is a new "package" devised by the NEWS to meet the needs of its busy readers in the service and contracting business. These helpful hints and suggestions for improved service methods and shortcuts have been assembled in capsule form for easy reading.

Thermometer Frozen to Liner Gives Accurate Reading

In checking the operation of a freezer, a serviceman often has to determine the temperature of the plate or inner liner evaporator. He usually does this by fastening a thermometer to the wall or plate with gum or tape.

Another way to do this is to cover the bulb of the thermometer with a cloth pad about 2 sq. in. in size that has been soaked with water. Place the thermometer bulb against the liner or plate with the cloth over it and apply pressure to the cloth on each side of the bulb.

In just a few seconds the water will freeze and hold the thermometer bulb tightly against the wall. So mounted, the thermometer will give an accurate reading. To remove it just pry up one edge of the cloth or melt it off by applying another cloth that has been in warm or hot water.

False Economy Runs Up The Cost Eventually

Economy in installations can be carried too far.

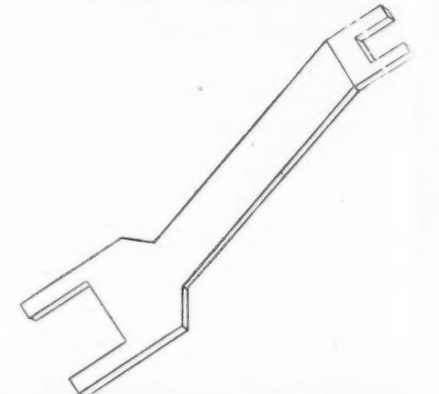
"In the past few months we have noticed various installations in which economy has been stressed to a point where the user is not receiving from the equipment that which it was designed to do," declares Gene Meler, manager of service and installations for Weber Showcase & Fixture Co., Inc.

"The undersizing of machines is one of the most common practices of all. We have visited installations where the machines have been speeded up in an attempt to get maximum capacity and others where the machines are so undersized that operating temperatures are continually causing the user alarm," he says.

"Usually you will find the use of undersized tubing in conjunction with the above, and throughout the entire installation other short-cuts are used. Then, at some later date, if corrections have to be made, the cost is usually much greater than if correctly installed in the first place."

He also suggests that for simplicity in multiple installations "equipment of like design operating at the same coil temperatures be installed on one machine which can be controlled by using pressure control only."

Offset Wrench Speeds Leveling of Appliances



Leveling feet of refrigerators and smaller appliances such as laundry equipment is simplified with the aid of an offset wrench which can be readily made out of 1/4-in. stock. Its design permits the appliance to be leveled while it's resting on the floor, speeding up the job and eliminating all the guesswork.

Over-all length of the wrench is about 8 in. Width is 2 in. at the widest part while the narrow part is 1-in. wide. The offset is 2 in.

Wrench slot at the big end is 1 1/2 in. wide and 1 1/2 in. long. This end is used for refrigerators. Slot at the other end is 3/16 in. wide by 3/4 in. long. This is a good size for the smaller appliances.

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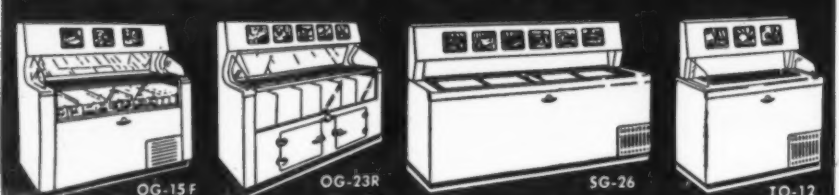
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BACK TO FUNDAMENTALS

Refrigeration Principles for
Beginners & Experienced Engineers, Salesmen, and Dealers

By K. M. Newcum, Author of
THE MASTER SERVICE MANUALS

Refrigerant Driers & Drying Methods - 3

EDITOR'S NOTE: K. M. Newcum's *MASTER SERVICE MANUALS* are without doubt the most widely read refrigeration books ever published, and the author can write authoritatively on all phases of the subject.

This is the third instalment of his review of what is probably the most frequently discussed subject among servicemen everywhere—moisture.

An example of the DFN Drierite is shown in Fig. 70. DuCal Drierite in molded form is shown in the Remco "Cross-Flo" drier in Fig. 71, and molded Remcal in Fig. 71A.

The determination as to whether the drier should be installed in a cold location or in the hot liquid line depends entirely upon the drying agent being used. To successfully dry hot liquid, the drying agent must do its work by chemical action. The most successful drying agent known for this purpose to date appears to be calcium sulphate.



Fig. 70 shows how McIntire uses molded DFN Drierite in a drier.



Fig. 71 is a cutaway of a Remco drier with molded DuCal Drierite.

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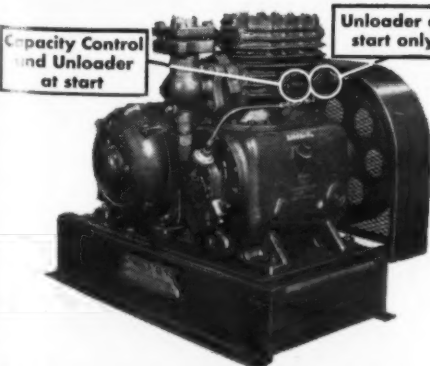
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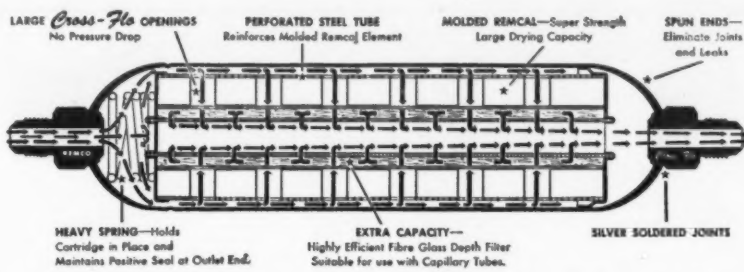


Fig. 71A shows construction details of a Remco "Cross-Flo" drier employing molded Remcal as the drying agent.

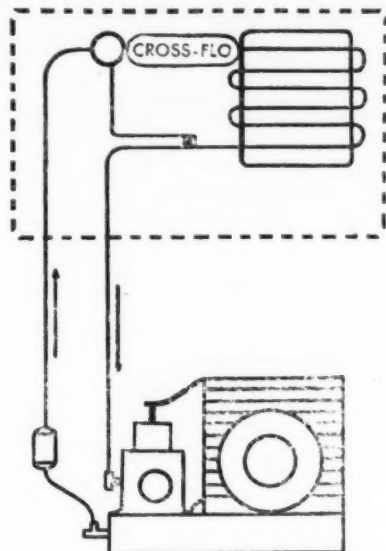


Fig. 72—A drier may be installed between evaporator and refrigerant metering device.

If the drying agent is to be installed in a cold location, either in the low side between the refrigerant control and evaporator as shown in Fig. 72, in the low side at the outlet of the evaporator as shown in Fig. 73, or in the suction line as shown in Fig. 74, then silica gel or activated alumina or any of the other physical drying agents are entirely satisfactory.

Driers containing physical drying agents may successfully be installed in the cold liquid line between a heat exchanger and the refrigerant metering device, as shown in Fig. 75. In this case, the liquid refrigerant is cooled by the cool suction gases in the heat exchanger. The cool liquid cooling the drying agent increases its efficiency to the point where it is very successful.

Your attention is invited to the fact that in this location it is extremely dangerous to stop the compressor and simultaneously close the liquid receiver valve because the drier, and the liquid line, and heat

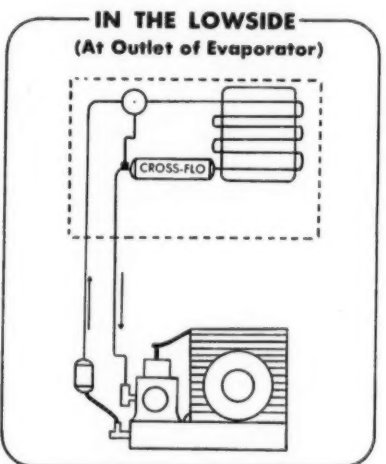


Fig. 73—Outlet of evaporator provides cold location for physical drying agent.

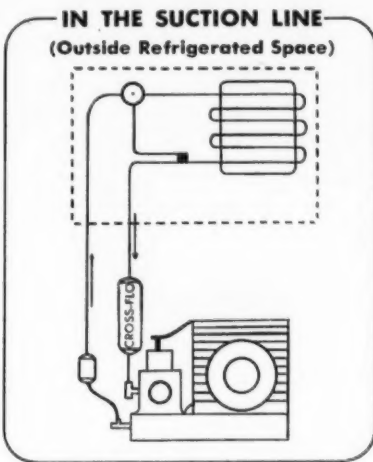


Fig. 74—Suction line is another cold location for drier installation.

exchanger will be trapped full of cold liquid refrigerant. Upon a slight increase in temperature, dangerously high hydrostatic pressures will result, probably rupturing the drier and heat exchanger and doing damage to other parts of the refrigerating system. If the compressor is shut off, the liquid should be pumped out of the drier, or the liquid receiver valve should not be closed.

Another method of utilizing physical drying agents successfully is shown in Fig. 76, which shows it in the by-pass between the liquid line and the suction line. In this case, valve B is open and valve A is cracked slightly to act as a refrigerant metering device expanding into the drying agent causing it to become cold and consequently, highly efficient.

Even though the refrigerant metering device ahead of the evaporator is frozen, this procedure allows the refrigerant to be circulated through the drier and dried. Then, when the metering device thaws out, dry refrigerant will be fed into it and the system will again return to normal operation. This application is especially recommended for larger

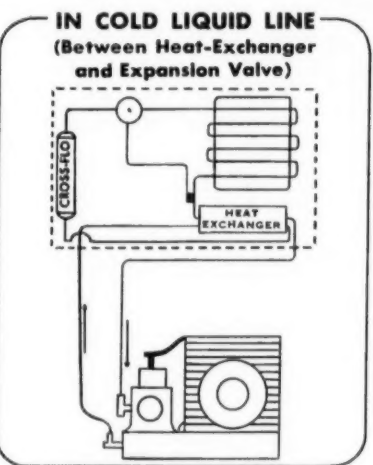


Fig. 75—Cold liquid line between heat exchanger and evaporator is also recommended for drier location.

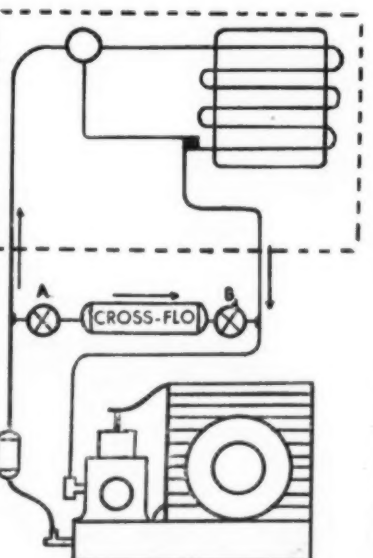


Fig. 76—Locating drier in by-pass permits drying system even if valve is frozen.

systems or as an emergency hook-up for quickly drying a job where only driers having physical drying agents are available.

BOTTOM FEED VS. TOP FEED

There has been considerable controversy among servicemen as to whether the liquid refrigerant should be fed into bottom of a drier and out the top or in the top and out the bottom.

This depends entirely upon the design of the drier. If the drier is so designed that the drying agent is loosely packed in a conventional manner, bottom feeding will cause the granules to be lifted and tossed about during the running cycle. This tossing about or agitation will gradually break down the drying agent into fine particles, eventually resulting in pressure drop and clogging, either within the bed of the drying agent or at the outlet filter pad. If the drying agent is loosely packed it is best to feed in at the top and out at the bottom, since top feeding will tend to settle the granules and clogging and plugging will be less prevalent.

(To Be Continued)

JUST OUT! 1951 Trade-In Guide



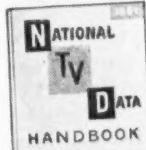
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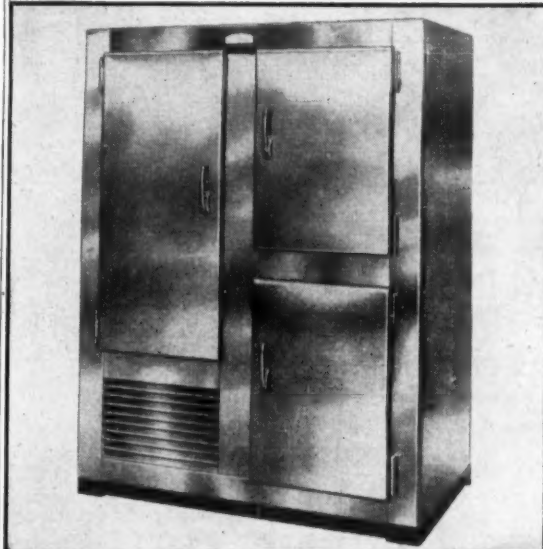
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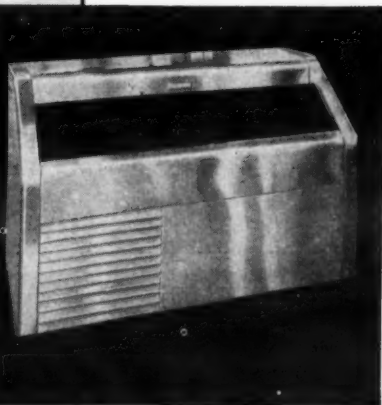
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Refrigeration Problems

and their Solution

by Paul Reed

For Service and Installation Engineers



Paul Reed

Copper In Ammonia Systems

QUESTION: I am trying to work out an idea I have on a small ammonia absorption system. It is very difficult to get small hand valves and automatic valves that are made entirely of steel and iron. Also, for my design, it is very difficult to use steel tubing.

I have worked around large ammonia systems, and they never use brass valves or copper tubing; but they were compression systems. On my ammonia absorption system, could I use brass valves and fittings and copper tubing?

ANSWER: Definitely not. It would be worse to use brass or copper in an ammonia absorption system than in an ammonia compression system.

If the compression system were perfectly dry, it is theoretically possible to use brass or copper in parts of the system exposed to the anhydrous ammonia. However, in practice, there is some water in the sys-

tem, so brass and copper are not used inside the system where the ammonia, with some moisture in it, can come into contact with the brass and copper parts.

Since, in the ammonia absorption system the ammonia is mixed with about twice as much water as ammonia, brass and copper cannot be used.

Some manufacturers, such as Henry Valve Co. and Alco Valve Co., make a line of small valves made of iron and steel, so you should be able to get them. Automatic controls, solenoid valves, expansion valves, etc., made of steel and iron, suitable for ammonia, are also available, but perhaps not in as small sizes as you wish.

Instead of copper coils for evaporators, you could use aluminum tubing—if you can find the aluminum tubing these days. Seamless steel tubing can normally be obtained in small sizes. Even under today's conditions you should be able to get the comparatively small amounts required for your experimental work.

THE CARBON TETRACHLORIDE HAZARD

A reader writes: "I want to express my full agreement with your article sometime ago on the hazards involved in using carbon tetrachloride. For quite a number of years I have been campaigning against the use of this cleaning solvent because of some knowledge of its bad effects through some personal experience. "It is such an excellent cleaner and so convenient to use, that it is an uphill fight to prevent servicemen from using it."

"Sometime ago I issued a letter to our dealers to the effect that carbon tetrachloride was very dangerous to use, not only because of its hazard to health, but also because of the bad effects on the system itself. This letter created a lot of controversy. The information given in your article should help in the campaign against the use of carbon tetrachloride."

ANSWER: As mentioned in your letter, carbon tetrachloride is such an effective cleaning solvent, that its harmful effects on the human system and on the refrigerating system, are too frequently overlooked or disregarded, if not entirely unknown. It is only by constant repetition and publicity that the danger can be minimized.

MIXING SO₂ IN 'FREON' AND METHYL SYSTEMS

QUESTION: I am an old sulphur man, and I know how easy it is to find sulphur dioxide leaks with an ammonia swab. On some occasions, I have mixed a little SO₂ in methyl chloride and "Freon-12" systems, if I couldn't find the leaks very easily. I don't believe that this has caused any trouble, but I have been told that it causes corrosion. Is this true or not?

ANSWER: The chemists tell us that there is no chemical reaction between sulphur dioxide and methyl chloride or "Freon-12," if the system and the refrigerants are dry and clean. The catch is that rarely is this true in a methyl chloride or "Freon-12" system, or, for that matter, any refrigeration system.

When water gets into a "Freon-12" system, a very tiny amount of the moisture combines with the "Freon-12" to form acids. The remainder exists in the "Freon-12" as free water that travels with the "Freon-12" until the refrigerant and moisture strike a cold part of the system, where some of the moisture is condensed out. How much of the moisture is condensed out depends on how cold the place is that the moisture-laden refrigerant comes to. The same is true for methyl chloride, although more acid is formed and more free moisture can be carried, than in "Freon-12."

The point is that in "Freon-12" and methyl chloride systems, there is some free moisture traveling with the refrigerant.

This is not true with sulphur dioxide. Any moisture that gets into an SO₂ system combines with the sulphur dioxide to form sulphurous acid. If enough water gets into the SO₂, large amounts of sulphurous acid are formed; enough that the parts of the system are heavily damaged by the corrosive action of the acid.

Consequently, freeze-ups of expansion valves caused by ice forming in the valves, are almost unknown with SO₂ systems, but stuck compressors and heavily corroded valve leaves and needles, are common.

"Old sulphur men" were taught to keep the system dry, for moisture in the system was far more serious than a frozen valve. Very much moisture in an SO₂ system meant heavy damage to the equipment.

We have become careless with moisture in "Freon" and methyl chloride systems, so we do not ordinarily go to the extreme lengths to dry them and keep them dry, that we did on SO₂ systems. Consequently, "Freon" and methyl chloride systems commonly have a good deal of moisture in them.

Now, for your question. If you put SO₂ in "Freon" or methyl chloride systems you are apt to cause corrosion; not because SO₂ unites with "Freon" or methyl chloride to form corrosive compounds, but because SO₂ combines with the moisture that is present in most "Freon-12" and methyl chloride systems, to form sulphurous acid that is quite corrosive.

If there are foreign materials in the system, or if the oil is not a well-refined oil, the sulphurous acid may cause sludges or other solid materials that may stop up valve screens and orifices, compressor oil passages, and may cause other similar troubles.

Therefore, it is not good practice to put SO₂ in "Freon" or methyl chloride systems to help find leaks.

Nor is it safe. Suppose that a large leak should develop. The occupants of the building may be injured, for they are not prepared for sulphur fumes and may not know how to protect themselves.

Moreover, think of some other serviceman who may work on this system later. The nameplate will indicate "Freon-12" or methyl chloride so, not expecting SO₂, he may get a dangerous "shot" of sulphur dioxide.

Still further; the SO₂ and "Freon" or methyl chloride have different boiling points and so may separate

from one another in various parts of the system in accordance with the temperatures in those parts.

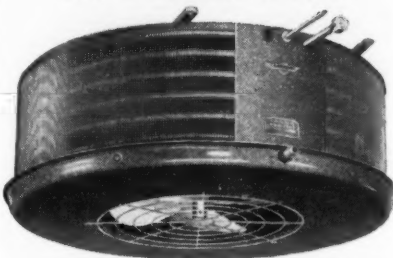
Finally, it is not necessary to add sulphur dioxide to "Freon" or methyl chloride systems in order to find small leaks. Various methods of detecting leaks in systems using various refrigerants will be discussed in this column.

Savoy Represents G-E Credit Corp. In New Iberia

DALLAS—George A. Savoy has been appointed local representative for the General Electric Credit Corp. in New Iberia, La., according to L. E. Scott, southwestern district manager in Dallas. The New Iberia area is included in the territory of the New Orleans office.

LOOK to LARKIN

for Performance



LARKIN TURRET HUMI-TEMP

The acid test of any product is performance. That's why you will find Larkin products used so widely for so many different refrigeration and air-conditioning applications. Users know from past experience that they can count on Larkin for top performance—day in, day out—year in, year out.

Manufacturers of the original Cross-Fin Coil—Humi-Temp Units—Evaporative and Air Cooled Condensers—Air Conditioning Units and Coils—Direct Expansion Water Coolers—Steel Vacuum Plate Coils—Heat Exchangers.

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319 MEMORIAL DR., S.E. ATLANTA, GA.

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Reg. U. S. Pat. Off.

Outperforms All
Dehydrators by
Test

Never Stores
Water

Removes to 1 1/2
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Neutralizes All
Acidity

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SAVES ENDLESS
SERVICE CALLS

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BERNA CORP.
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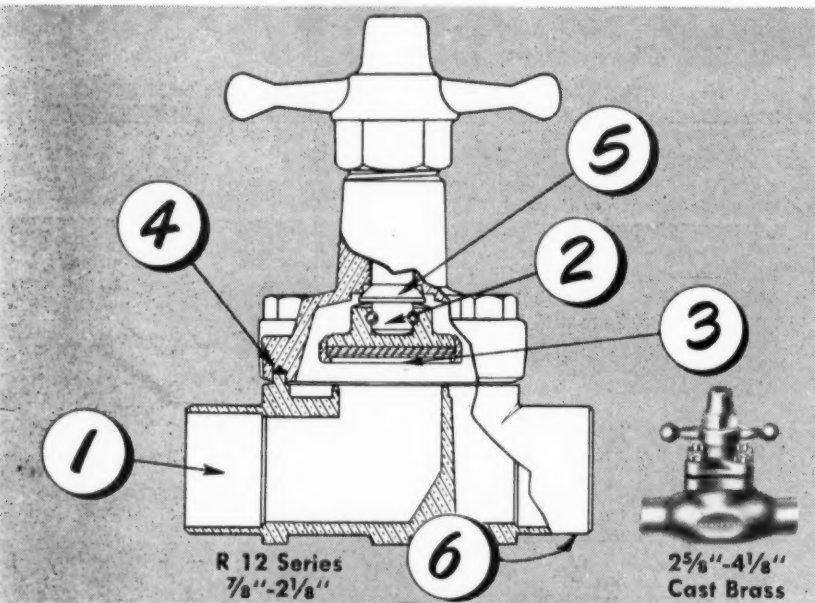
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of the

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Forged Brass
GLOBE VALVE

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- ✓2. SELF-ADJUSTING—self-compensating "floating" disc.
- ✓3. POSITIVE SHUT-OFF—seals flow without forcing.
- ✓4. LEAK-LOK BONNET SEAL—assures leak-proof bonnet joint.
- ✓5. REPACKS IN USE—positive back-sealing.
- ✓6. TEMPERATURE-PROOF—withstands soldering, never develops porosity.



Always Extra Value at No Extra Cost

SEE YOUR **KEROTEST** WHOLESALER

KEROTEST MANUFACTURING CO.

PITTSBURGH 22, PENNSYLVANIA

YOU CAN'T
GET ALONG WITHOUT
THIS NEW
PARTS CATALOG

HARRY ALTER'S
SPRING-AND-SUMMER 1951

DEPENDABOOK No. 154

OVER 9,000
REFRIGERATION
PARTS AND
SUPPLIES

• To successfully conduct a business in these days of scarcities, you really need DEPENDABOOK No. 154...If it's available you'll find it listed in this latest edition.

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... ON YOUR LETTERHEAD

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NEW YORK 13, N. Y.

"Service doesn't falter when it comes from Harry Alter"

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... for the best in Refrigeration Replacement Controls

Here, in one easy-to-locate source, you'll find listed the exact Ranco control for more than 4,000 replacement installations! Conveniently listed are all refrigeration manufacturers and trade names, as

well as the Ranco Replacement Control code number.

Now you can replace it right with a precision-built Ranco control. Save shopping all over town.



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Ranco Inc.
COLUMBUS 1, OHIO

WORLD'S LARGEST MANUFACTURERS OF REFRIGERATION CONTROLS



Government Contracts

PROCUREMENT INFORMATION

The following is a list of proposed procurements issued by the various indicated U. S. Government procurement offices. This list is compiled and made available daily on a free pick-up basis. Prospective bidders may obtain complete bid sets by a request to the purchasing office under which the purchase is listed in this Synopsis. Be sure to identify completely the bid invitation you wish by including in your request the item description, the invitation number or reference number and the opening date. This will save time in filling your request. For reasons of economy, specifications are normally not included with the bid invitations unless the specification is a new one. First time bidders on a particular item should request a copy of applicable specifications and drawings at the time the request for a bid set is made.

DEPARTMENT OF DEFENSE

It is not necessary to refer solely to the issuing office for additional data on a bid invitation issued by any of the following U. S. Army Ordnance Offices: Ordnance Tank Automotive Center; Detroit Arsenal; Frankford Arsenal; Picatinny Arsenal; Watertown Arsenal; Rock Island Arsenal; Springfield Armory; Watertown Arsenal; and Watervliet Arsenal. Complete information on any purchase listed by any of those offices alone can be obtained from the Ordnance District Office nearest you. Its address is on file in your nearest Department of Commerce Field Office. Do not ask an Ordnance District Office for information on a purchase unless it is listed by one of the above-named offices. Ordnance District Offices do not have information on any other purchases.

Description	Quantity	Invitation No.	Opening Date
Officer in Charge, Navy Purchasing Office, Los Angeles, Calif.			
Refrigerator	6 no	53704	27 Mar 51
Commandant of the Marine Corps, Washington, D. C.			
Attn.: Supply Department, Procurement Section			
Ranges, Electric, Domestic, Cabinet Type, Style A, Federal Spec. W-101	500 ea	1411	29 Mar 51
Cabinets, Ice Cream Storage, Self-Contained, Electric, 6-Hole, Capacity 25-35 Gal. U. S. Army Spec. No. 32-56	192 ea	1414	30 Mar 51
Cabinets, Ice Cream Storage, Self-Contained, Electric, 10-Hole, Capacity 50-75 Gal. U. S. Army Spec. No. 32-56	68 ea	1414	30 Mar 51
Wright Patterson Air Force Base, Dayton, Ohio			
Cabinet, Chilling, Mech. Refrigerated Low Temp.	12 ea	51-1582	2 Apr 51
Supply Officer, Philadelphia Naval Shipyard, Philadelphia 12, Pa.			
Attn.: Purchase Section			
Gauge, Pressure, 2 1/2" Dial Size, Spec. 45-G-7B	80 ea	Ships-2080	29 Mar 51
Gauge, Compound, Size of Dial 4 1/2" Diam., Sim. & Equal to Ser. Ft. No. 1188P Page 42 of Manning-Maxwell & Moore Cat. "Ashcroft Gauges"	188 ea	Ships-2080	29 Mar 51
Gauge, Pressure, 4 1/2" Dia. 2 1/2", Dia. 3 1/2" Dia. Specs. 45-G-10, 45-G-3E, Mil. E-15090	190 ea	Ships-2081	29 Mar 51
District Public Works Office, Sixth Naval District, Charleston, S. C.			
Air Conditioning Bldgs. 1162 and 89, Naval Recsta. Naval Base, S. C.	1	26711	12 Apr 51
Aviation Supply Office, 700 Robbins Avenue, Philadelphia, Pa.			
Gas Freon 11 Commercial	47000 lb	254002	29 Mar 51
Officer in Charge, Navy Purchasing Office, Los Angeles, Cal.			
Valves	119 ea	155/145677	11 Apr 51
Valves	50 ea	155/145674	10 Apr 51
Angle Valves	500 ea	155/145674	10 Apr 51
Valves	255 ea	155/145664	11 Apr 51
Refrigeration Fittings	9800 ea	155/145617	11 Apr 51

GENERAL SERVICES ADMINISTRATION

Description	Quantity	Reference No.	App. Bid Date
Chief, Purchase Division, Federal Supply Service, General Services Administration, Room 528, U. S. Court House, 219 S. Clark St., Chicago 4, Ill.			
Electric Water Coolers	81 ea	CHD-2001	4-5-51
Refrigerators, Electric, Household, Commercial, Biological and Etc.	155 ea	CHD-1005	4-9-51
Chief, Administrative Services Section, Public Buildings Service, General Services Administration, 12th Floor, 250 Hudson St., New York 13, N. Y.			
Retubing Heating Boiler, U. S. Post Office, Westfield, N. J.	1 job	PB-Region-2	3-28-51
Retubing Heating Boiler, U. S. Post Office, Cooperstown, N. Y.	1 job	PB-Region-2	3-28-51
Chief, Supply Section, Public Buildings Service, General Services Administration, Washington 25, D. C.			
Valves, Pressure 3/4"	100 ea	1008	4-4-51
Tubing, Copper, Refrigeration, 50 ft Lengths, Misc Sizes	100	1013	4-3-51
Refrigerant, Dichloromethane	2,200 lbs	1000	3-30-51
Soda Fountain	1 ea	1020	4-10-51

TENNESSEE VALLEY AUTHORITY

Description	Quantity	Reference No.	App. Bid Date
Chief, Materials Branch, Tennessee Valley Authority, Chattanooga, Tenn.			
Insulating Materials for Heating, Ventilating, and Air Conditioning Systems	75	658480/25	3-28-51
Condenser Tubes, 30 Ft. x 0"	41,600 ea	665632B/1	4-4-51

DEPARTMENT OF INTERIOR

Description	Quantity	Reference No.	App. Bid Date
Amarillo Helium Plant, P. O. Box 911, Amarillo, Texas			
Four Section Removable Tube And Fin Radiator Core, with Gaskets, for Young Radiator Co. Model 222 Full Flow Jacket Water Cooler, Each Quarter Section Must Be Interchangeable with the Corresponding Section Supplied as Original Equipment on this Model Cooler, F.O.B. Exell Helium Plant, Exell, Texas	2 ea	6301-9	3-26-51
U. S. Bureau of Mines, Petroleum and Oil-Shale Experiment Station, Box 621, Laramie, Wyoming			
Dust Precipitator and Collector W/After Cleaner Cap. Over 2,000 CFM, Pressure of 5.5 In Water	1 ea		4-3-51

U. S. DEPARTMENT OF COMMERCE

Description	Quantity	Reference No.	App. Bid Date
Chief, Procurement Section, National Bureau of Standards, 620 11th St., N. W., Washington 25, D. C.			
Condenser Electrolytic Tubular Cornell Dubilier No. BR-1045-A	100 ea	B-1-2204-51	3-30-51
Tubing Copper, Soft, Commercial, Seamless Drawn Supply Vacuum Tubes	1,250 ft.	B-2-2217-51	3-27-51
Various Repair and Install Yorkaire 275 Air Conditioning Unit In Room 205, Chemistry Bldg., Equip and Job To Be Inspected Before Making Bid Instrument Now Located In Room 209 for Inspection	407 ea	B-1-2232-51	3-30-51
Furnish & Install Air Conditioning Equip. In Rm 216 East Bldg NBS W/Specs		B-1-2306-51	4-6-51

CONTRACTS AWARDED AS OF MAR. 14, 1951

Description	Contractor and Address
Department of the Navy, Bureau of Ships, Washington 25, D. C.	
Condensing Unit Assemblies, water cooled (22), Ice Cube Freezing Unit (11)—Carrier Corp., 385 Madison Ave., New York 17, N. Y.	
Aviation Supply Office, 700 Robbins Ave., Philadelphia 11, Pa.	
Fans, electric, non-portable—Westinghouse Electric Corp., 3001 Walnut St., Philadelphia, Pa.	
Corps of Engineers, U. S. Army, Chicago Procurement Office, 226 W. Jackson Blvd., Chicago 6, Ill.	
Ice Plants—Reco Products Div., Refrigeration Engineering Corp., 2020 Naudain St., Philadelphia 46, Pa.	
Air conditioning—Carrier Corp., 300 South Geddes St., Syracuse, N. Y.	
Chemical Corps Procurement Agency, Army Chemical Center, Maryland	
Desiccant, Type V, Grade A—Davison Chemical Co., Baltimore, Md.	
United States Air Force	
Temperature Indicators, cl-05D—Aviation Engineering Corp., Woodside, L. I., N. Y.	
Temperature Indicator, cl-05D—Weston Electrical Instrument Co., Newark, N. J.	
Ships Parts Control Center, Naval Supply Depot, Mechanicsburg, Pa.	
Thermometers, Industrial—The Philadelphia Thermometer Co., 6th and Cayuga Sts., Philadelphia 40, Pa.	
Thermometers, Dial and Industrial—Weksler Thermometer Corp., 52 West Houston St., New York 12, N. Y.	
Temperature Regulators and Various Repair Parts—Robertshaw-Fulton Controls Co., Fulton Sylphon Div., Knoxville 4, Tenn.	
District Public Works Office, First Naval District, 495 Summer St., Boston, Mass.	
Temporary Cold Storage Facilities at U. S. Naval Supply Depot, Newport, Rhode Island—D. C. Loveys Co., 1430 Massachusetts Ave., Cambridge, Mass.	
Argenti Construction Co., 49 Weybosset St., Providence, R. I.	
Aviation Supply Office, 700 Robbins Ave., Philadelphia 11, Pa.	
Fans, Electric, Bracket Type, Non-Portable—Westinghouse Electric Corp., 3001 Walnut St., Philadelphia 4, Pa.	
Chicago Quartermaster Depot, U. S. Army, 1819 W. Pershing Rd., Chicago 9, Ill.	
Prefabricated refrigerators—Hussmann Refrigerator Co., 2401 N. Leffingwell Ave., St. Louis, Mo.	
Prefabricated Refrigerators—Bally Case & Cooler Co., Bally, Pa.	
U. S. Navy Purchasing Office, 1206 S. Santee St., Los Angeles 15, Calif.	
Refrigerators—Baker Bros. Corp., 711 S. Flower, Los Angeles 14, Calif.	



What appears to be a real refrigerator is actually a cardboard display designed by the Geo. F. Horndasch Co. of Chicago to demonstrate the features of the new 1951 Norge refrigerators. A. H. Witzleben, Jr., Norge sales promotion manager, at left, and George Horndasch worked together to create this display.

Norge Product Displays Use Flasher To Deliver 2 Messages In 1 Area

CHICAGO—Norge Div. of Borg-Warner Corp. introduced a new series of product displays to its distributors.

George F. Horndasch Co. of Chicago designed the displays to fit in with Norge's 1951 advertising theme, "Out of this World."

An unusual construction technique to show two alternating messages at one focal point was employed in the refrigerator, washer, and water heater displays. This was accomplished by placing a flasher behind two screens.

One message is printed on the outer screen and is visible when the light is off. When the light flashes on, the outer message disappears and is replaced by one printed on the inner screen.

This technique was put to use in

the refrigerator display. When the flasher light is off, the display is a full-sized replica of a Norge refrigerator with special attention paid to the various interior features. When the light is on, the refrigerators appears to be fully stocked with food. A retail salesman using the refrigerator or water heater display to demonstrate features can, by turning a switch, stop the flasher at either the on or off position.

This type of display, therefore, serves a double purpose, according to A. H. Witzleben, Jr., Norge sales promotion manager. It not only calls the customer's attention to the product, but is also used as a sales tool to demonstrate in a very dramatic way the features of that product.

Credit Restrictions--

(Concluded from Page 1, Column 3) able goods. If this decline should continue, the administration would be under pressure to ease instalment credit restrictions.

Organized labor opposes Regulation W on the grounds that it discriminates against the "have-nots" in favor of the "haves." The administration has plenty of other troubles with labor right now, and probably would be in a mood to appease labor on this point.

The Federal Reserve Board must soon go to Congress to ask for an extension of its power to regulate consumer credit terms. The power expires June 30 of this year unless renewed. The board would probably want no outcry against it on the eve of its going before Congress for a renewal of its powers.

Silver Brazed Joints To Be Detroit ASRE Meeting Topic

DETROIT—"The Strength of Silver Brazed Joints at Sub-Zero Temperatures" will be discussed and demonstrated before the Detroit ASRE section at 8 p.m. Monday, April 2, by Alden W. Swift of Handy & Harmon, New York City. The meeting will be held at the Rackham Bldg. here.

FINE LINE of BEVERAGE COOLERS

Fast, efficient cooling
The work-horse of beverage coolers

Sizes: 12, 22 and 32 case capacities with self-contained units.
17, 27 and 37 case capacities for remote installation.

YOU CAN'T BEAT THE VICTOR

For information write:

VICTOR

MANUFACTURERS OF THE FAMOUS VICTOR QUICKFREEZE

PRODUCTS CORPORATION • HAGERSTOWN, MD.

speaking about TRADE-INS

is a spiffy new 24-page booklet just published by the News. It presents you with some fresh, dandy ideas on how to help eliminate one of your perennial bugaboos, the "trade-in" problem.

The whole problem is divided into three categories and some sound, sensible methods on how to deal with each category are described: 1. Acquiring the "trade-in" and determining its worth. 2. Reconditioning the "trade-in." 3. Marketing the "trade-in."

The whole contents of this booklet is compiled from the best articles on and experiences of other appliance dealers whom the News has talked to in the past year. These ideas are actually used successfully and perhaps they would work as well or better for you. At least you can read about them and see how they fit in with your operation.

The booklet sells for 50¢ a copy. Order now! Use this coupon.

Business News Publishing Co.
452 W. Fort St., Detroit 26, Mich.

Please send me copies of your new booklet "Speaking About Trade-Ins," at 50¢ per copy.

Name

Address

City State

3-26-51

Buckeye RSES Will Hold Annual Meeting In Dayton from March 30 to April 1

DAYTON—The Buckeye State Association of the Refrigeration Service Engineers Society will hold its fifth annual convention at the Miami hotel here from March 30 through April 1.

Friday and Sunday will be devoted largely to business meetings while Saturday's program will consist of an educational session with the annual banquet and floor show in the evening.

The convention will open with a tour through the Chrysler Airtemp plant at 1 p.m. Friday. The business meeting, slated for the evening, will be followed by a Get-Together Party.

Five speakers, a film, and a question-and-answer session have been programmed for Saturday.

Ewing Stumm, vice president in charge of sales for National Cash

Register Co., will talk on "Customer Relations and Business Records"; C. R. Neeson, staff engineer for Chrysler Airtemp, on "Air Conditioning Problems"; E. T. Benson, Frigidaire, on "B-9 Code"; Paul Reed, RSES international educational chairman, on "Why You and Your Friends Should Belong to RSES" and "Drum Color Identification"; and George Schulz, RSES international safety director on "Safety Month Every Month."

The Westinghouse film "It All Adds Up To Better Service and Customer Good Will" will be shown in the morning.

H. T. McDermott, RSES international secretary, will address the annual banquet.

A business meeting and election of officers are scheduled for Sunday.

Inventory Loans--

(Concluded from Page 1, Column 5) chines." He stated that durable goods are moving at "a higher than normal" level.

There has been some talk of heavy distributor buying of room air conditioners. Philco said recently that it had enough distributors' orders on hand for room air conditioners to cover the company's entire 1951 output.

However, Philco officials also said that consumers were buying earlier this year than ever before, and that

selling air conditioners is becoming more of a year-round business.

In speaking on a recent network radio forum, Bernard A. Mitchell, president of Mitchell Mfg. Co., producer of room air conditioners, answered a question concerning how much hoarding he believed existed, by stating:

"There has been very little hoarding, but rather a large amount of anticipatory buying on the part of wholesalers and retailers, and this excess inventory has been passed along to the consumer, who now has greater purchasing power than he ever had before."

Five "SPOTLIGHT" Issues of AIR CONDITIONING & REFRIGERATION News FOR 1951



READERS of AIR CONDITIONING & REFRIGERATION NEWS will again get "Bonus" reading in 1951 through the publication of five issues of unusual editorial significance. These issues will focus attention on important phases of product, design, engineering data, statistics, field installation and service, distribution and merchandising.

The Editors of the NEWS are now laying plans to make these issues of special interest and value for our readers. In addition to the many feature and exclusive articles, these issues will, of course, contain their regular quota of up-to-the-minute news and regular features.

To assist advertisers in planning for these five issues, the publication date and editorial scope of each is listed below:

**APRIL
30**

(Advertising Closes
April 30)

Air Conditioning Merchandising and Applications Issue

Will highlight current and future market conditions, product design and development, engineering and installation techniques, successful merchandising plans. Theme will be a heavy accent on underlining the vital importance of air conditioning in defense. This issue will be brought to the direct attention of government officials at Washington. Special feature of this issue will be the publication of the winning entries in the NEWS unusual applications contest.

**MAY
28**

(Advertising Closes
May 18)

Freezer Specifications and Merchandising Issue

The annual compilation of freezer specifications for all home and farm freezer manufacturers. A highly important issue for material and parts manufacturers and of special value to dealers, distributors, and their salesmen. One of the most "looked for" and usable issues of the year. Plus market data and special merchandising and selling features—How freezers aid the national economy and what manufacturers and dealers can do about it.

**SEPT.
17**

(Advertising Closes
September 7)

Silver Anniversary Issue

Marking 25 years of AIR CONDITIONING & REFRIGERATION NEWS leadership in the industry. Highlighting the history and progress of refrigeration and air conditioning . . . its products, its personalities. The industry's newspaper salutes the men, companies, products, achievements, and developments which have made this industry a great one.

**OCT.
8**

(Advertising Closes
September 28)

Pre-Exposition Issue

A full-dress preview of the 7th All-Industry Exposition at Chicago. A terrific interest builder for show attendance and an advance "shopping guide" for products to be featured at Navy Pier.

**NOV.
5**

(Advertising Closes
October 26)

Exposition Issue

The traditional "Show Issue"—carrying the complete list of exhibitors and their products . . . news of association meetings and a line-up of key industry events . . . feature articles, exposition highlights . . . the BIG issue of the year!

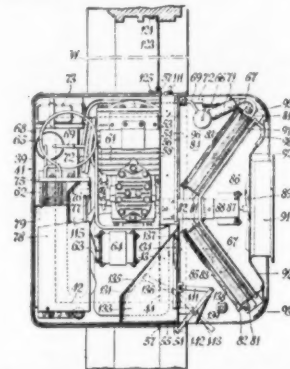
This Editorial Significance Means Advertising Impact!

May We Suggest You Reserve Your Advertising Space In These Issues Soon? No increase in advertising rates.

**AIR CONDITIONING &
REFRIGERATION News**
450 W. FORT ST.
DETROIT 26, MICHIGAN

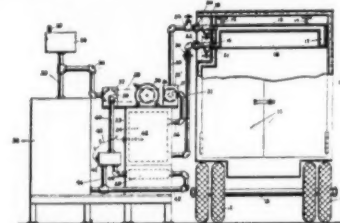
PATENTS Weeks of Oct. 17 & 24 (Continued)

2,526,391. ROOM AIR CONDITIONER. Robert W. Morgan, Hamburg, August G. Trometer, Kenmore, and Leonard J. Sals, Hamburg, N. Y., assignors to Fedders-Quigan Corp., Buffalo.



1. In a room air conditioner having enclosed internal and external compartments adapted to be positioned respectively within and outside of a room through an opening in a wall thereof, a bulkhead wall extending transversely of the compartments and dividing one from the other, said bulkhead wall being adapted to be positioned in said opening, refrigerant condensing apparatus in the external compartment, an air cooling evaporator in the internal compartment, a vestibule wall extending from the bulkhead wall adjacent one end thereof to a portion of the external compartment, said vestibule wall separating said end of the bulkhead wall from said condensing apparatus, said bulkhead and vestibule walls each being formed with an air inlet opening, a damper door mounted in the vestibule between the walls and means for moving the door to close one or the other of said openings, additional air openings formed in the internal compartment adjacent the bulkhead opening and in the external compartment between the bulkhead and vestibule walls thereby to provide independent air circuits including said additional openings for the compartments when the door is positioned to close the bulkhead opening, and a common air circuit between a portion of the external compartment and the internal compartment when the door is positioned to close the vestibule opening, said door when positioned against said vestibule opening blocking the flow of air through said vestibule opening between the internal compartment and the condensing apparatus.

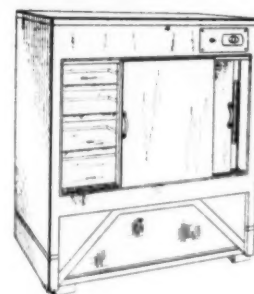
2,526,398. COOLING SYSTEM. Orion Ottis Oaks, Summit, N. J., assignor, by mesne assignments, to Thermal Liquids, Inc., New York, N. Y.



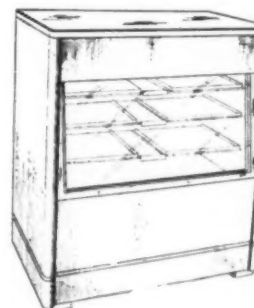
1. In a system of the type described including a container to be cooled by an organic ortho silicate, a reservoir in the container, means for heating an organic ortho silicate, absorption type refrigerating means including an evaporator and a generator where the refrigerant is vaporized for ultimate use in the evaporator, a second reservoir containing an organic ortho silicate to be cooled by the evaporator, a closed piping system connecting said heating means to one side of said generator to heat the same and vaporize the refrigerant and connecting the other side of said generator to the return side of said heating means, and a closed piping system connecting the second of said reservoirs to the first of said reservoirs.

DESIGNS

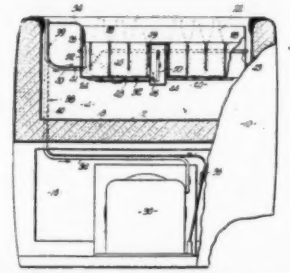
160,501. REFRIGERATOR. William E. Jones, Medford, Mass.



2,526,667. REFRIGERATING STRUCTURE FOR VENDING MACHINES. Elmer C. Johnson, Kansas City, Mo., assignor, by mesne assignments, to The Vendo Co., Kansas City, Mo., a corporation of Missouri. Application March 1, 1948, Serial No. 12,247. 3 Claims. (Cl. 92-99.)

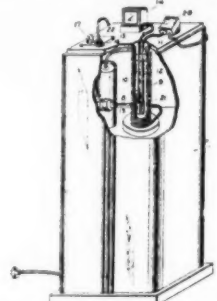


The ornamental design for a refrigerator, substantially as shown.



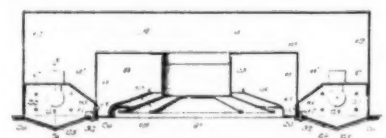
1. In apparatus of the kind described, article supporting structure including an open top receptacle having a bottom wall, side walls and a plurality of interconnected partitions joined directly to the side walls and the bottom wall, setting off a plurality of substantially identical article receiving stalls, said receptacle being formed entirely from a relatively thin material having high heat conductive properties, the articles all engaging said bottom walls and that portion of the partitions forming their corresponding stalls, certain of the articles engaging proximal side walls of the receptacle; and refrigerating mechanism having evaporator tubing coiled tightly about and attached to the outer face of said side walls and convoluted beneath said bottom wall in direct joined contact therewith.

2,526,713. APPARATUS FOR TESTING REFRIGERATION CONTROLS. Cloyd L. Underwood, La Mesa, Calif.



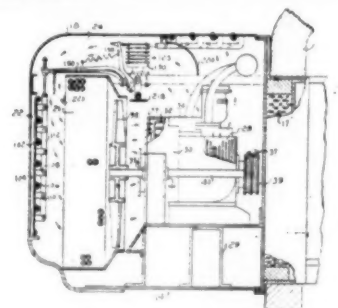
1. An apparatus for testing temperature responsive control switches for refrigerators comprising a container filled with low freezing liquid, electrically operated refrigerating means, a tube coiled around said container and operatively connected to said refrigerating means in such manner that the cooled refrigerant passes through the tube to cool the container and its contents, said container having an opening adapted to receive the bulb of a temperature responsive control switch under test, a thermometer, the bulb of which is immersed in said low freezing liquid, said refrigerating means having an electric motor and an electrical circuit in which said motor is connected, said electrical circuit having leads for connection to a control switch under test, whereby actuation of said motor is under control of said switch, and a pilot light operatively connected in said circuit to indicate when said refrigerating means starts and stops operation.

2,526,828. ILLUMINATING AND VENTILATING APPARATUS. Leonard E. Phillips, Teaneck, N. J., assignor to Anemostat Corp. of America, New York, N. Y., a corporation of Delaware. Application May 1, 1947, Serial No. 745,125. 8 Claims. (Cl. 132-74.)



3. Apparatus of the character described comprising an elongated air duct including a pair of elongated light fixture casings constituting closures for side portions of its bottom, the medial bottom wall portion of said air duct being detachably fastened to the inner side walls of said light fixture casings to afford access to said air duct.

2,526,874. APPARATUS FOR HEATING OR COOLING THE ATMOSPHERE WITHIN AN ENCLOSURE. Frederick M. Jones, Minneapolis, Minn., assignor to The U. S. Thermo Control Co., Minneapolis, Minn.



1. An air conditioning apparatus comprising a refrigerant evaporator, a condenser connected in a fluid circuit with said evaporator, means for changing the fluid circuit in such a manner that the evaporator is in open communication with the condenser whereby the evaporator becomes a heating heat exchanger and receives heat from the condenser, a source of heat positioned adjacent the condenser, an enclosure having walls enveloping the condenser and the source of heat in such a manner that heat is transferred to the condenser, a movable ventilator in a wall of said enclosure, and a temperature responsive means positioned within said enclosure and operatively connected to said ventilator for moving the ventilator when the temperature within said enclosure varies beyond a predetermined range of temperature.

(To Be Continued)

Freezers on Trial

8 Main Reasons Given Ways and Means Committee (1) Why Freezers Are Essential (2) Why They Should Be Exempt from 25% Excise Tax

Secretary Snyder framed his recommendation for additional revenue from excise taxes in terms of a tax on "those consumer goods which are less essential or which use material which will be in short supply." The essentiality of food freezers will be described later in this statement, therefore, let us discuss the use of excise taxes as a medium for controlling materials.

Did Secretary Snyder mean that these items using critical materials would automatically be in short supply or eliminated entirely? If so, how would the nation's income be increased by taxation on items that would not be offered for sale? Or did Secretary Snyder imply that an excise tax on all items requiring materials necessary to the defense effort serves to divert consumer spending from these to other items that do not require critical material?

If it is the latter, it seems inconceivable that our government would spend literally thousands of dollars each month for the function of the National Production Authority with complete legal right in the formation of rules and regulations regarding the allocation to industry of critical materials. The NPA has used its power to date by issuing several "M" orders which are controlling to the desired degree the consumption of critical materials.

Executives of this important agency are being advised constantly

by advisory committees composed of executives fitted through experience to submit factual information as it pertains to production possibilities, quantities of raw materials, inventories wanted and required, importance of end use products, degree of civilian curtailment necessary, and on any other subject within the scope of NPA.

Furthermore, why require a consumer to pay a purchase tax on an item to prevent making more of that item, to aid in conserving critical materials? Direct control will do that job and do it without taxation.

Referring again to that portion of Secretary Snyder's statement "those consumer goods which are less essential," consider the following facts relating to the essentiality of food freezers:

1. Food freezers store accelerated food production. During the past five years, food freezing has come into widespread use as a new and better method of preserving and storing food—a method offering unusual advantages in time of national emergency. Greater food production, so necessary for a successful war effort, will defeat its own purpose and lead to waste unless adequate means of storing quantities of food are provided.

Early in 1942, the country was faced with a very critical food storage shortage. To alleviate this situation, everyone was urged to start

"victory gardens." Inexperience made it impossible to properly gauge the size of crop and, consequently, much spoilage of food already in short supply resulted.

Today, the home and farm freezer is a well-known and generally accepted household necessity. Consumers research surveys have found that it is listed either first, second, or third in the individual household's list of most wanted items.

2. Food freezers conserve food. A food freezer makes it possible to preserve food in small quantities, and use leftovers that frequently are lost for the lack of low-temperature storage. Such waste savings in consumption are important to our economy.

During war or in a period of great national emergency, it is important that every possible pound of food be conserved and utilized to the best possible advantage.

3. Food freezers—family locker plants. Increased use of processed frozen foods and manufacture of storage equipment have boosted food production to a point where the nation is even now facing inadequate storage facilities.

The Department of Agriculture stated in June, 1949, that during the war years, many locker plants were permitted even in the face of scarcity of essential materials and equipment which were subject to war priorities regulations. Since the war, the number of locker plants has increased at an average rate of more than 1,300 per year, and it is now estimated that there is a total of 10,617 in existence.

74% In Small Communities

It has also been estimated that 1,750,000 lbs. of food are now stored in locker plants in the country during the year. Of the total locker plants in existence, approximately 74% are in communities of 5,000 population or less. If locker plants were considered essential during World War II, why shouldn't food freezers in each individual home be considered equally as essential? Particularly, since most of the locker plants are in communities of 5,000 population or less.

Surely, frozen foods are just as essential to cities having more than 5,000 population, and it is evident that more low temperature storage capacity is required. Through the use of food freezers, considerable low temperature storage capacity can be placed in remote rural areas, urban areas which now do not have locker plants, and in homes that are unwilling to add to the profit required by a commercial locker plant operation.

Assuming a thousand pounds of food per freezer, 1,000 freezers provide storage for one million pounds of food.

4. Food freezers provide nutritious variety. Extensive research has conclusively proved that freezing does the best job for the largest variety of foods.

All kinds of meat and fish, most all fruits, and practically all vegetables can be frozen. In addition, baked foods, pre-cooked foods, and even complete meals can be frozen. Consequently, a food freezer offers the largest selection of good food, well-preserved for long periods of time.

In the almost forgotten past, home canning of foods was a real necessity and proved to be a real safeguard against starvation when the family was hit by unemployment, unexpected expenses, and when lack of transportation made it impossible to secure the foods required. Unfortunately or fortunately, the laborious, time-consuming task of home canning is an almost forgotten art—unknown to many housewives of today.

According to a report published in *Industrial and Engineering Chemistry* on the effects on vitamin content of commercially canned foods at various temperatures over periods of 4 to 24 months, it was observed that both temperature and time of storage had an adverse effect on vitamin content, the degree of effect depending upon the particular food and the specific vitamin.

It was also observed that food stored at lower temperatures showed a better retention of vitamins than those held at higher temperatures. With few exceptions, all foods can

Editor's Note: Last week a presentation was made before the House Ways & Means Committee, urging the rejection of a proposed 25% excise tax on home and farm freezers. The presentation was prepared by J. W. Krall, Tyler Fixture Corp., chairman of the Food Freezer Section, Refrigeration Equipment Manufacturers Association, and was given by J. H. Overmyer, Revco, Inc.

The presentation presents many fine arguments why a home freezer is more of a "necessity" than a "luxury" in these times, and offers many fine sales arguments for the purchase of a home freezer. Because it offers valuable helps and tips to those selling home freezers, a condensed version of the presentation is published here. It can also be useful to those who wish to frame their own individual protests to Congress about the proposed excise tax increase.

be frozen successfully with full retention of nutritive and vitamin content.

5. Food freezers are food banks. Low temperatures provide protection for large quantities of food for extended periods of time, make the food freezer not merely a convenient appliance, but a small locker plant within the home designed for long range planning of food supply.

Food freezers attained their major growth from 1946 through 1950. During this period, more than 2,000,000 freezers of all sizes were placed in service. The food freezer converts fresh foods to the frozen state and preserves foods in excellent condition for months, and up to a year or more on certain products.

Family of 4 Can Save \$25 Per Month

One manufacturer of food freezers, after intensive research through the United States Department of Agriculture, (Bureau of Human Nutrition and Home Economics) and the United States Bureau of Labor Statistics, estimates that by judiciously stocking and using a food freezer, a family of four can save approximately \$25 per month.

These figures were based on the purchase of meat, poultry, desserts, and vegetables when the items were in season and prices correspondingly low, plus the worth of leftovers which normally would be lost. Indeed, a food freezer is certainly a food bank.

6. Food freezers relieve shortages caused by critical war materials. During World War II much of the food rationing was due to lack of containers which required critical materials such as steel, tin, and aluminum.

Substitutes such as glass jars were hastily developed, but these required critical rubber for adequate sealing. Consequently, production of foods could not be properly geared to requirements because of acute shortages of containers. Furthermore, the production of these containers required valuable man hours and drew upon the overtaxed transportation facilities of the country.

These factors, plus the food shortage which resulted, contributed largely toward the amazing development of the food freezer industry during the past five years.

2 Billion Lbs. In 1950 Pack

The National Association of Frozen Food Packers reports that the annual pack of frozen fruits and vegetables rose from about three hundred million pounds in 1941 to more than seven hundred and fifty million pounds in 1945. It is estimated that the 1950 pack exceeded two billion pounds.

Figures revealed at the National Frozen Food Industry conference held in Chicago early in 1950 indicated that the year 1949 saw an increase of 38% in the tonnage consumption of frozen foods over 1948. An increase of 40% to 50% was expected for 1950.

It is interesting to note that wherever frozen foods were in high demand one could be sure that food freezer sales were also high. In other words, the sale of freezers complemented the sale of frozen food.

7. Food freezers conserve valuable man-hours. When properly using a

food freezer, the average owner need make trips to shopping centers or produce markets approximately one fifth as often as the individual without one. This means that less gasoline, oil, and rubber are used in keeping him fed; also, less shipping and trucking are required to stock the stores that supply his needs.

The Department of Agriculture states that five carloads of fresh vegetables equal one carload of frozen vegetables. The big difference is created by the compactness of frozen products and also by the elimination of much of the inedible portion (pea pods for example).

These savings in space can effect greater savings in transportation problems, especially at times when our railroads and trucking lines are overloaded. Food freezing can also effect great savings in man-hours when everyone will be called upon to work longer, which means fewer hours for shopping.

8. Food freezers—cooked food can't. Pre-cooked frozen meals are available commercially today and are entirely practical. To prepare them for eating requires only heating.

Food Bank In Case Of Atomic Attack

It is said that practically every meal consumed on board a commercial airliner was prepared long ahead of the day it was consumed. In the event of an atomic attack, frozen meals stored in food freezers located in rural areas would adequately provide for refugees from devastated areas.

Every plan for civilian defense requires three items in the respective order: a. Medical care. b. Shelter. c. Food.

Every individual can assist in doing something about the third item through the intelligent use of food freezers.

Food preservation is just as important as food production. Nevertheless, an excise tax of 10% was imposed on household refrigerators in 1932, and extended to food freezers on Nov. 1, 1950. Now Secretary Snyder requests that this 10% be increased to 25%.

As Louis Ruthenberg, chairman of the board, Servel, Inc., has previously stated: "With complete inconsistency, the American taxpayer carries the heavy double burden of taxation and high food prices in order that enormous subsidies may be paid for food products."

Last week the NPA issued Order M-47 advising manufacturers that steel consumption would have to be reduced by 20% on List A items. This order exempts from this restriction home and farm freezers in excess of 13 cu. ft.

Thus, one government authority, after careful investigation, has decided that home and farm freezers, at least of a certain cubic foot capacity, are not a luxury but an essential end product.

The members of the Food Freezer Section of the REMA submit that there is no justification whatsoever in considering food freezers as luxuries; that this excise tax on food freezers should not be increased above the present 10%; rather that serious consideration be given to the complete elimination of all excise tax from this item that is so necessary to the American way of life.

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" \$5.00 per insertion. Limit 50 words. 10¢ per word over 50.

RATES for all other classifications \$7.50 per insertion. Limit 50 words. 15¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other addresses by actual word count. Please send payment with order.

POSITIONS WANTED

WHOLESALE REFRIGERATION sales and service representative with successful record as zone mgr., field service supervisor and parts traveler wants connection with manufacturer or distributor of commercial or domestic refrigeration equipment. Best of references from present employer. Territory preferred, S. California and Arizona. Write BOX 3696, Air Conditioning & Refrigeration News.

SALES ENGINEER-Estimator-Constructor, thoroughly competent in air conditioning, refrigeration, heating, gas and heavy oil burning. Technical graduate. Professional engineer. Available to established reputable contractor. 16 years experience. Age 41. Will accept small base salary and percentage of gross. Reply BOX 3697, Air Conditioning & Refrigeration News.

REFRIGERATION SERVICE engineer—20 years background including air conditioning and engineering. 10 years refrigeration service all makes, household and commercial. 5 years own business specializing in all types commercial temperature control, installation, sales and service. Desire change. Will swap reliability, knowledge, energy, open mindedness, congeniality and feeling of responsibility for income to commensurate proportions. Age 41. Opportunity for advancement. BOX 3698, Air Conditioning & Refrigeration News.

REFRIGERATION SERVICEMAN or servicemanager. Would consider taking over service department on my own. 21 years practical experience on all makes, types, industrial, commercial refrigeration and air conditioning, all sizes including ammonia, ice makers, cube machines etc. 40 years old, married, car and tools. BOX 3699, Air Conditioning & Refrigeration News.

REFRIGERATION ENGINEER, B. S. in Mech., 10 years experience in engineering, sales, management and public relations. 3 years with present employer, 3 years as chief engineer. Wants to relocate in Mid-west. BOX 3700, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

SALE MAN FOR HUSSMANN distributor in San Diego, California. Must be experienced in food store layout and equipment. Salary, expenses and bonus. This is an excellent opportunity for the right man. Must have proven record and best references, none other need apply. **WRIGHT REFRIGERATION, INC.**, 4025 Pacific Highway, San Diego, California.

COMMERCIAL REFRIGERATOR salesman. Have excellent opening for top notch producer familiar with Hussmann and other similar lines. Largest stock and display in the South. Give complete details in first letter. **ZEROZONE HOUSTON CO.**, 1120 Wood Street, Houston, Texas.

ENGINEER—MIDWEST manufacturer of a variety of contract products and hermetic refrigeration systems has position available for product development and

laboratory assistant. This is an excellent opportunity in various phases of engineering work. Write giving full qualifications and background. BOX 3690, Air Conditioning & Refrigeration News.

AIR CONDITIONING salesman—top rank. We offer permanent job, constant promotion, effective advertising, complete inventory stock, highest pay, all selling expenses paid, by established aggressive Carrier distributor midwest metropolitan city. We want only one thing from you—sales results. If you can close sales and want a five-figure income, write BOX 3701, Air Conditioning & Refrigeration News.

MANUFACTURER'S AGENTS handling allied lines, wanted for (1) Northern Ohio Southern Michigan, (2) Florida, (3) Alabama to Louisiana, and (4) Kansas City trading area territories by old established manufacturer of complete line of refrigerated store fixtures. Liberal commission and aggressive advertising. BOX 3702, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

COMPLETE RUNNING (4 year old) summer-winter system including: One 20 H.P. Chrysler Compressor; 20 Ton Marlo Condenser; 20 Ton Evaporative Condenser. Bryant Steam Boiler. Condensate pump, etc. Write: (Owner) **GOOD-FRIENDS**, Austin, Texas.

COMPRESSOR BODIES, brand new; model #19 good up to 1-HP. @ \$38; includes flywheel and service valve. The last of a large quantity. First come, first serve. **MANN REFRIGERATION SUPPLY CO.**, 15 Astor Place, NYC, GRamercy 3-8000.

SELF-CONTAINED units, top brand, 3-5 7½ ton, all new. Aluminum sheets, full size, suitable for ductwork, .025-.032-.040. Copper tubing, M and L, all sizes and fittings. Large stocks all of above. Liquidating at current market value. Write for price schedule. BOX 3703, Air Conditioning & Refrigeration News.

NEW 1012 Wilson Walk-In Freezer, 2 H.P. air cooled Brunner unit, with T 210 Thermobank. BOX 3704, Air Conditioning & Refrigeration News.

SCHOOLS

VETERANS ATTENTION: Enroll in the school of your choice before the July 25 deadline. For men engaged in or who would like to become engaged in any phase of air conditioning, refrigeration, heating, ventilating, heat pump engineering or sheet metal work, classes before the July 25 date start April 24, June 5 and July 17. Write for catalog. **DETROIT AIR CONDITIONING INSTITUTE**, 4258 Woodward Avenue, Detroit 1, Michigan.

MISCELLANEOUS

NORGE SEALED units remanufactured and exchanged. Immediate delivery from stock, 1 year warranty. Write for prices and shipping instructions. Genuine Norge terminals for Norge sealed units. Complete set of three, \$145 plus postage. **MODERN REFRIGERATION CO., INC.**, 12541 E. McNichols Road, Detroit 5, Michigan.

NORGE SEALED units—remanufactured and exchanged. All SO₂ units converted to "Freon-12." Factory methods are used, and all work is supervised by Norge factory trained men. For additional information and prices write **NORD HERMETIC COMPANY**, 1701 San Leandro Blvd., San Leandro, California.

Refrigeration Units WANTED

Desire to purchase 1/8 to 1-HP Sealed or Open type; standard brands; Complete condensing units; Also motors, controls, valves, etc. Give full details.

HARWOODE EXPORT CO.

31 E. 4 Street, New York 3, N. Y.

Air Conditioning Contest Winners--

(Concluded from Page 1, Column 2) awards were made by the five judges. The other money prizes in each division were a \$50 second prize, a \$25 third prize, and 10-\$10 fourth prizes.

The judges were Frank Y. Carter of Detroit Lubricator Co.; George H. Clark, director of the Detroit Air Conditioning Institute; H. A. Harty of Wolverine Tube Co.; George F. Taubeneck and Phil B. Redeker, both of AIR CONDITIONING & REFRIGERATION NEWS.

Decisions were based strictly on the unusual aspects of the applications.

The contest was launched in the Nov. 13, 1950 issue of the NEWS and closed at midnight March 1, 1951. The judges gathered at the NEWS offices last week and made their decisions.

Entries came not only from all parts of the United States, but also from various parts of the world. Pictures and descriptions came from New Zealand, China, the Philippines, Cuba, South Africa, Puerto Rico, Belgium, Holland, and Egypt.

There were three instances where persons who submitted more than one entry received prizes on two of their installations.

Ken Crapeau of the export division of Chrysler Corp. was awarded the \$25 third prize and one of the \$10 fourth prizes in the packaged unit division. Another of his entries won honorable mention in this division.

John J. Kramer of John J. Kramer & Associates, Detroit, won a \$10 fourth prize in both the packaged unit and central station divisions.

Max Wright of Refrigeration Service Co., McAllen, Tex. won two \$10 prizes in the room cooler division.

Winners of the money prizes below the \$100 first prize in each division are as follows:

ROOM COOLER DIVISION

\$50—Robert T. Davis, Davis & Collins, Kalamazoo, Mich.

\$25—Richard F. Hollis, Thermodyne Corp., New York City.

\$10—Gentry Akin, Chestnut-Salter-Best Hardware Co., Danville, Ky.; Carlos Chacon, Crosby & Rust, Del Rio, Tex.; A. C. Johnson, Central Electric Co., Davenport, Iowa; Antonio E. Larroca, Borinquen Appliances Co., Inc., San Juan, Puerto Rico; Robert H. Lee, Lee Refrigeration Co., Nashville, Tenn.; Dwight T. Mills, C. H. Montgomery & Co., Inc.,

Fredericksburg, Va.; Wade Olsen, Olsen Co., Pittsburgh; Richard Petticrew, Petticrew Cooling Service, Detroit; and Max Wright, Refrigeration Service Co., McAllen, Tex., (two prizes).

PACKAGED UNIT DIVISION

\$50—R. G. Dickinson, Power Engineering Corp., Wilkes-Barre, Pa.

\$25—Ken L. Crapeau, Chrysler Corp., Detroit.

\$10—E. F. Cassing, Kansas City, Mo.; Crapeau; Dan Hensley, Dan Hensley Sales & Service, Miami, Okla.; A. D. Hopkins, General Refrigeration & Appliance Co., Jackson, Miss.; S. B. Johnson, Henry W. Miller Electric Co., Omaha, Neb.; John J. Kramer, John J. Kramer & Associates, Dearborn, Mich.; Robert Lebowitz, Robert Lebowitz Co., Lawrence, Mass.; Marcos Menendez Quiros, Menendez y Trujillo, Vedado, Havana, Cuba; Alvin J. Roussell, Roussell Equipment Co., Gretna, La.; and G. E. Trahern, G. E. Trahern Co., Pauls Valley, Okla.

CENTRAL SYSTEM DIVISION

\$50—J. Ralph Smith, J. Ralph Smith Co., Inc., Lexington, Ky.

\$25—Thomas Fahey, General Motors New Zealand Ltd., Petone, N. Z.

\$10—Alex W. Baer, Gregorio Arana, Inc., Manila, Philippines; Earl Carrier, Carrier-Mandell, Inc., Boston; W. H. Dixon, Johnson Furnace Co., Kansas City, Mo.; John J. Kramer, Marlo Coil Co., Dearborn, Mich.; Edward B. Mazzotta, Frigidaire Sales Corp., Detroit; John R. Miller, J. R. Miller Corp., Detroit; Mr. Raaymakers, Koeltechnisch Bureau Frigidaire, Breda, Holland; Felix Stone and George S. Cox, Baton Rouge, La.; W. J. Way, II, Way Engineering Co., Houston, Tex.; and M. J. Witt, Refrigeration Equipment Co., Dayton.

Entrants who received honorable mention and copies of George F. Taubeneck's latest book, "Both Feet on the Ground," are as follows:

ROOM COOLER DIVISION

Harry C. Ashcroft, Standard, Inc., Baton Rouge, La.; Charles Conrad, Conrad Refrigeration, Holland, Mich.; Dodwell & Co., Ltd., Hong Kong, China; Victor M. Fabian, Square Deal Refrigeration, Inc., Detroit; James R. Groseclose, Groseclose Refrigeration Service, Bristol, Tenn.; C. T. Hill 241 Appliance Center, Abbe-

ville, La.; Thomas B. Hix, Lydick-Barmann Co., Fort Worth, Tex.; John D. Hunter, Raymond-Hunter, Inc., Crowley, La.; J. Ingvarsen, Copenhagen, Denmark; Stanley J. Janczarek, Refrigeration Service, Inc., Detroit; and Sterlie E. Rybarczyk, Prairie Refrigeration Service, Prairie du Chien, Wis.

PACKAGED UNIT DIVISION

Ken L. Crapeau; Stan Davies, Ohio Edison Co., Elyria, Ohio; James P. Donohue, Climate Control Co., Phoenix, Ariz.; John R. Elliott, Thigpen Hardware Co., Picayune, Miss.; Elmer E. Friedrich, Authorized Sales & Service, E. St. Louis, Ill.; W. M. Herbruck, The Canton Hardware Co., Canton, Ohio; F. S. Kemp, Gulf Power Co., Pensacola, Fla.; Harry L. Kramer, Ditmas Air Conditioning Co., Brooklyn 16; Frank O'Brien, Frigidaire Sales Corp., Detroit; M. S. Pemberton, Kossman Appliance Co., Cleveland, Miss.; and Claude Triplett, Kosciusko Paint & Hardware Co., Kosciusko, Miss.

CENTRAL SYSTEM DIVISION

Elmer L. DeHart, DeHart Refrigeration & Air Conditioning, Chickasha, Okla.; Fred C. Ducker, Ducker Refrigeration Co., Florence, S. C.; M. L. Garza, Laredo, Tex.; Arnold A. Harris, The Spring Cotton Mills, Lancaster, S. C.; Stanley J. Janczarek; Joe Lewis, Lewis Refrigeration Service, Cape Girardeau, Mo.; R. W. Macdonald, Sunrise Heating & Service Co., St. Louis; Don McNearney, Refrigeration Equipment Co., Madison, Wis.; S. E. Rybarczyk; and Allyn W. Schoen, Al Schoen Air Conditioning & Refrigeration Co., Sacramento, Calif.

Bendix Refrigerator --

(Concluded from Page 1, Column 2) of new and better ideas in modern merchandising."

Predicting that "we are going to be shorter of labor than anything else in the next 10 years," Bles called upon appliance dealers to begin placing women in sales jobs, adding:

"We are the only industry that sells things to women and uses men almost exclusively to do so."

"We have been able to get away with it because we have had such a strong demand for our products, but the companies and retailers who lead the way in the future will use women for selling as well as demonstrating."

On the matter of reports of a falling off of refrigerator and television sales in some areas, Bles said the public is "tiring" of being stampeded into scarce buying, and predicted that this "tiredness" would cease after a while with sales again attaining high levels.

Stephen Hall Joins NPA's Durable Goods Division

WASHINGTON, D. C.—Stephen C. Hall, associated for the past five years with Edgar Morris Sales Co., Washington distributor for Westinghouse Electric Corp. and Zenith Radio Corp., has joined the Consumer Durable Goods Division of the National Production Authority.

Serving as a commodity industry analyst in the division's industry operations bureau, Hall will supervise the laundry equipment, vacuum cleaner, and electric sewing machine groups.

Allocation Plan Will Give Users More Tin

WASHINGTON, D. C.—The new allocation program on tin, announced recently by the National Production Authority, will operate to give users more tin than they have been getting in the past two months.

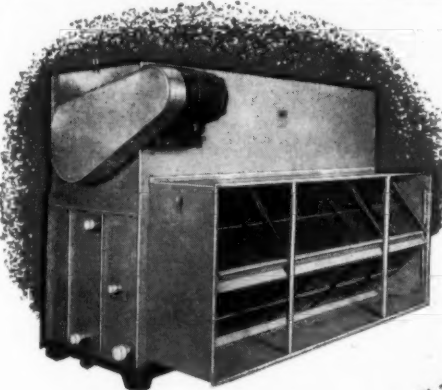
Users of pig tin other than tinplate and terneplate will be permitted in each month of the second quarter to use up to 90% of their average monthly use in the first half of 1950. In February and March, they were restricted to 80% of the average monthly use in the first half of 1950.

These pig tin users are mainly those who use the metal for making wire, solder, piston rings, and other industrial and civilian products whose manufacture was permitted to continue after the March 1 cutoff date that eliminated the use of tin in many items.

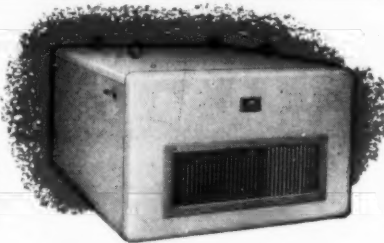
Starting May 1, anyone wishing to deliver or accept delivery of pig tin will first have to have a specific allocation authorization from NPA for the month. NPA stated it would send such allocation authorizations to appropriate suppliers who have their applications in by the 20th day of the month preceding that in which delivery is sought. NPA said persons desiring to purchase the pig tin will be notified when the allocation authorizations are made to supplier.

NEW PRODUCTS?

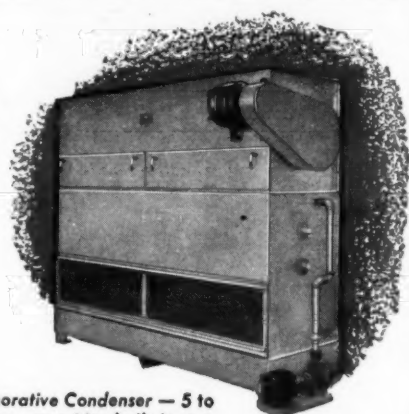
Turn to "What's New" Page for useful information on new products. Use Key No. for fastest service.



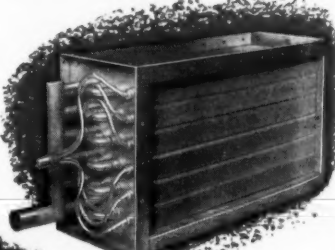
Air Handling Unit—Horizontal and Vertical units available in 8 case sizes with ratings of from 5 to 60 tons.



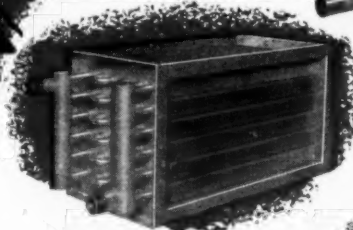
Comfort Conditioner—2 case sizes with 900 and 1800 CFM and ratings of 3 to 8 tons.



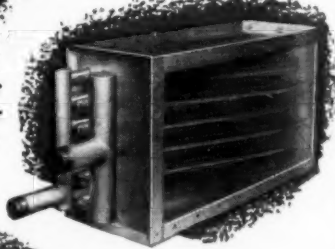
Evaporative Condenser—5 to 75 ton capacities built in sections to go through standard doors.



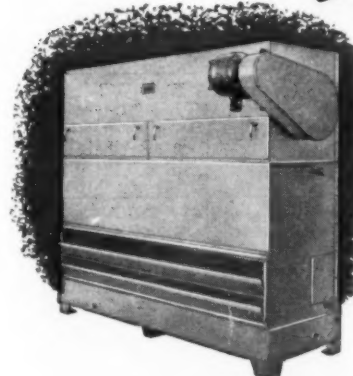
D X Coil—6 standard heights and 17 lengths offer a wide variety of sizes for any direct expansion application.



Water Coil—For heating or cooling. Correctly circuited for minimum water pressure drop.



Steam Coil—Available as standard or non-freeze. O-Gee curve allows free expansion of tubes. Sizes to match D X Coils.



Cooling Tower—Capacity ratings of 3 to 75 tons. Induced draft type permits locating anywhere inside or outside of building.

NPA Ignores Dairy Processing Supplies--

(Concluded from Page 1, Column 3) billion dollar annual health product," he said, "originating on 4,500,000 farms."

He told the committee of appeals for relief by two companies.

"They had the support of the Department of Agriculture," he explained. "There was conveyed to the National Production Authority, for the Secretary of Agriculture, the secretary's own justification of these special appeals for relief, because they were recognized by the Department of Agriculture, as the claimant agency for the food industry, to be significant appeals."

"The appeals were presented to NPA by the companies and representatives of the Department of Agriculture just four weeks ago today. The appeals have not yet been granted. Numerous other appeals have shared their fate. Clearly something is wrong here."

Last fall, he related, at the invitation of the Department of Agriculture, the dairy industry group helped draft an emergency plan to assure that milk would continue to be processed.

"From the beginning of the emergency onward," he said, "we have advocated an immediate materials allocations program to maintain the dairy industries on a maintenance, repair, and necessary replacement basis. There has been no effective action in response. Food is something the National Production Authority appears to take for granted."

He advocated a present course, "workable from both ends," to cut off non-essential uses of critical materials and channel them into essential purposes.

"It seems fair to assume that the final responsibility to put such a principle into action rests with ODM Director Charles E. Wilson and DPA Administrator William H. Harrison, along with NPA Administrator Manly

Fleischmann," he told the committee.

"The NPA policy now is to give the barest routine attention—and only at lower and intermediate levels—to insuring a continued supply of dairy processing equipment—in fact of all food processing equipment...."

"Small businessmen coming to Washington cannot expect to drop in on Mr. Fleischmann, Gen. Harrison, and Mr. Wilson. They can explain only to subordinates—in some instances subordinates, true, of considerable rank."

"These subordinates apparently have instructions to hew always and only to one given line—to stall along, so far as the food field is concerned, until some day a broad Controlled Materials Plan can be laid down."

"Again we say it seems to us that something is wrong here, and that the dairy industry—and the public—have a right to find out where the barriers are and by whom and why they have been put up."

Immediate and concurrent remedial measures, Faust said, are to:

"1. Cut back non-essential military uses of scarce materials;

"2. Rapidly curtail the use of critical materials for non-essential civilian purposes;

"3. Use outright directives to relieve the worst individual company hardship cases; and

"4. Allocate to essential industries specified amounts of necessary materials."

Stressing that "I am not questioning the good motives of anyone," Faust said that it was difficult to understand why, since special allocations have been made for machine tools and heavy power equipment and fruit and vegetable packing... NPA is refusing to do in our industry what it has done piecemeal in other fields—without denying the full merit of the dairy industry's case."

"Everybody talks about the weather..."

"but nobody does anything about it." Mark Twain (who lived a short distance from the present Bush plant) said that... and he was right. And he is still half right. Everybody still talks about the weather... more than ever before. But today something is being done about it. This determines what they say... and, most important, what they buy. Bush air conditioning and refrigeration equipment is designed to make customers and employees comfortable... and, because comfortable customers buy more and comfortable employees work harder, buyers of Bush equipment are more comfortable, too. Get acquainted with the Bush Representative in your territory and experience for yourself the comfortable feeling which comes with Bush service, engineering and dependability.

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